ACUTE LETHALITY DATA

FOR ONTARIO'S IRON AND STEEL

MANUFACTURING SECTOR EFFLUENTS

COVERING THE PERIOD FROM

NOVEMBER 1989 TO OCTOBER 1990

OCTOBER 1991





ACUTE LETHALITY DATA FOR ONTARIO'S IRON AND STEEL MANUFACTURING SECTOR EFFLUENTS COVERING THE PERIOD FROM NOVEMBER 1989 TO OCTOBER 1990

Report prepared by:

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OCTOBER 1991



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SUMMARY

Under the MISA program, the Iron and Steel Processing Industries were required to monitor their liquid effluents (both final and cooling waters) for acute lethality to trout and to Daphnia magna by conducting laboratory toxicity tests. This requirement was based on provisions of the Ontario Environmental Protection Act which allow the Ministry to write regulations requesting persons responsible for sources of contamination to monitor. record and report to the Ministry. Specific details of the toxicity testing requirements may be found in the General Effluent Monitoring Regulation (Ontario Regulation 695/88) and the Effluent Monitoring Regulation for the Iron and Steel Processing Sector (Ontario Regulation 321/89). Data collected under the MISA monitoring regulation will be used. in part, for the development of compliance limits for effluent toxicity. The following data is the company submitted toxicity test results from this monitoring, as well as the results from audit samples that were tested by the Aquatic Toxicity Unit in the Ministry's laboratory in Rexdale. In addition, Atlas Specialty Steel and Dofasco Steel voluntarily submitted toxicity test results for intake water samples, and these have been included in the report. Frequency of sampling was monthly for process effluents and quarterly for cooling waters, with a few exceptions. If tests over three consecutive months showed ≤ 20% mortality to trout, then subsequent trout testing was completed using a single concentration test procedure. In this procedure, fish were exposed to full strength (undiluted) effluent and a control. Companies reverted back to full series test procedures if the effluent sample caused ≥ 20% mortality in any single concentration test.

Acute lethality toxicity tests are a rapid, simple method for measuring the potential effects of complex effluents on aquatic organisms. The monitoring regulations required the companies to conduct all acute lethality tests in accordance with Ministry protocols (Protocol to Determine the Acute Lethality of Liquid Effluents to Fish (Craig et. al., 1983) and Daphnia magna Acute Lethality Toxicity Test Protocol (Poirier et. al., 1988)). In these tests, aquatic organisms are exposed to undiluted effluent and several effluent dilutions for a fixed period of time. The Ministry protocols require a 96 hour exposure period for trout and a 48 hour exposure for Daphnia. An LC50, the concentration of effluent estimated to cause 50% of the test animals to die, is calculated, where possible, for each sample. This statistic and its associated confidence limits are used as a measure of the toxicity of the effluent. The timing of toxicity sampling was arranged to coincide with chemical characterization of the effluent to assist in the determination of the causes of toxicity.

This report covers the full twelve months of sampling for this sector. Over the twelve months of monitoring, the seven companies in the Iron and Steel industry submitted toxicity results for 248 samples collected from 33 sampling points. An additional 29 audit tests were conducted by the Ministry's laboratory. With one exception, the reporting of toxicity data by this sector went smoothly, and the quality of the data was acceptable. On April 11, 1991 an inspection was conducted on the facility conducting toxicity testing for one of the specialty steel mills. This inspection was conducted in response to several

problems encountered with data received from this company. The inspection revealed several problems at the consulting laboratory, therefore the 12 results submitted for their client have been removed from the database until this situation has been resolved. This data will not be used in any summaries or discussions. In August 1990 there was a labour dispute between the steel workers and Algoma Steel Corporation and Stelco Steel (Hilton and Lake Erie Works), and the operations were shut down for approximately 80 days. Subsequently sampling was disrupted, and no test results were submitted for the months of August, September and October for Algoma Steel, and for the months of September and October for Stelco Steel Hilton Works. Stelco Steel Lake Erie Works was under a Certificate of Approval which required the company to conduct monthly toxicity testing, therefore toxicity sampling was not disrupted.

General

The Iron and steel sector in Ontario can be divided into two groups based on raw materials used, and subsequent differences in production techniques. These two groups are the *integrated mills*, and the *specialty steel/mini mills*. The integrated mills use iron ore, coal and limestone/dolomite, as feed stock and process this material into various finished, or partially refined, iron and steel products. These mills have cokemaking, ironmaking, steelmaking, cold forming, hot forming and finishing operations. The Algoma Steel Corporation, Dofasco Steel, and Stelco Steel Hilton and Lake Erie Works are integrated Steel mills. The specialty steel/mini mills use processed iron products or scrap steel as feed stocks for their steelmaking, hot forming and finishing operations to make specialty steels for the market. Atlas Specialty Steels, IVACO Rolling Mills and Lake Ontario Steel Company Limited (LASCO) are specialty steel or mini-mills. A more thorough overview of Ontario's iron and steel sector can be found in the development document for the effluent monitoring regulation for the Iron and Steel industry (Environment Ontario 1989).

Daphnia magna Toxicity Test Results

Results for 219 Daphnia magna toxicity tests conducted on 219 samples of effluent and intake water were submitted by the companies. An additional 29 audit toxicity tests were conducted by the Aquatic Toxicity Unit of Environment Ontario, and these results will be included in the analysis of the data. There is one outstanding request for resubmission of data due to data entry errors. The data base contains 217 test results for the integrated mills and 31 test results for the specialty steel/mini mills.

The overall distribution of toxicity of these effluents to *Daphnia magna* is illustrated in Figure 1. This figure shows the differences in toxicity of mill outfalls to trout and *Daphnia*. For both integrated and specialty steel/mini mills, there were more samples which were acutely lethal to *Daphnia* than to trout. This difference was greatest for the specialty steel/mini mills where no samples were acutely lethal to trout, but 19.4% of the samples were lethal to *Daphnia*. Two other trends can be identified from Figure 1. The first trend

is that some of the samples from the integrated mills which induce an unusual toxic response with *Daphnia*. Mortalities in these tests were high in the intermediate effluent concentrations (5%, 15% or 30% concentrations) and lower above or below these concentrations. The results for these tests are entered as LC50 > 100%, but they should be examined carefully because they indicate that, to a point, the effluent samples became more toxic as they were diluted. This response was not found in the trout tests, nor was it seen in *Daphnia* tests conducted on samples from the specialty mills, but it has been encountered in effluents from other industrial sectors. The second trend is the greater numbers of samples which have LC50s > 100% for *Daphnia*, than there are for trout regardless of process type.

INTEGRATED MILLS

Approximately 58% of samples tested from the integrated mills were not acutely lethal to Daphnia magna, and a further 26.7% had 48h LC50s > 100%. 10% of the samples tested from the integrated mills were acutely lethal to Daphnia (48h LC50 \leq 100%) and toxicity differed between mills (Figure 1).

Algoma Steel Corporation

Algoma Steel Corp. had 11 lethal samples, five of which came from the Bar and Strip Lagoon (Figure 2). There is probably no single cause of toxicity for the Bar and Strip Lagoon samples. In some cases, ammonia levels were approaching lethal levels and, in other cases, cyanide was at toxic concentrations. For example, the sample from May had toxic pH levels of 9.2, cyanide at 280 ug/l, and ammonia at threshold lethal levels. The effluent sample collected from the 24 Inch Coke Quench Overflow in May was toxic to Daphnia, and had ammonia levels 2 times the 48h LC50 values for this organism. The compound(s) responsible for toxicity in the #2 Tube Mill or Coke Oven Condenser samples could not be found.

Dafasco Steel

There was one lethal sample from the East Boat Slip Sewer at Dofasco Steel. There were insufficient chemistry analyses conducted to suggest the cause of toxicity in this case. There were four samples from Dofasco Steel (Ottawa Street Sewer, West Bay Front Sewer, and Boiler House Sewer #2) which induced an unusual toxic response in the Daphnia test. Studies in the Ministry laboratory indicate that ammonia, cyanide, nickel and some volatile solvents can cause this type of toxic response, but there may be other causes as well. All of the tests on these Dofasco samples resulted in less than 50% mortality at the intermediate concentrations. A Blast furnace recycle system was installed and started up April 16, 1990. This system has resulted in an reduction of effluent volume at the West Bay Front Sewer by 66 m³/min.

Stelco Steel Hilton Works

There were toxic samples collected from the #1 60 Inch Sewer (Figure 3), #2 Rod Mill and the 20 Inch Mill (Figure 4) of Stelco Steel Hilton Works prior to April 1990. On April

14, 1990 the 20 inch mill was officially closed. On May 17, 1990 the process effluents from the acid regeneration plant and the #3 pickle line were redirected from the #1 60 inch sewer to treatment. This resulted in a subsequent removal of acute toxicity from the #1 60 inch sewer in all samples tested after April 1990. The December sample from the #1 60 inch sewer had pH of 3.7 and a copper level of 63 μ g/l, both of which are lethal to *Daphnia*. Similarly, the February sample had a pH of 2.93 and it was toxic to *Daphnia*. The toxic sample collected in March had a neutral pH (6.67), but there were several metals (chromium, copper, aluminum) which combined could account for some of the toxicity. The December sample from the 20 Inch Mill had high levels of oil and grease, and 70 μ g/l of copper, both of which could have contributed to its toxicity to *Daphnia*. It was unclear what caused the toxicity for the December sample from the #2 Rod Mill. Stelco Steel Hilton Works was the only other steel mill which had outfalls which induced the unusual toxic responses seen at the Dofasco mill. None of the seven samples (from outfalls 400, 601, 602, 1100, 1900 and 2000) induced mortalities greater than 50% in any of the test concentrations.

Stelco Steel Lake Erie Works

Stelco Steel Lake Erie Works in Nanticoke had two toxic samples from the #4 Pond Discharge. Chemical characterization of these samples did not indicate any specific chemical which might be causing toxicity. It is possible that toxicity might be related to zebra mussel control (eg. chlorination) measures being conducted at some of the facilities located on Lake Erie.

SPECIALTY STEEL/MINI MILLS

Approximately 19% of samples from the specialty steel/mini mills were acutely lethal (48h $LC50 \le 100\%$) to *Daphnia magna*. 48.4% were non-lethal and a further 32.3% had LC50s > 100%. There were no unusual toxicity responses in samples from the specialty mills.

Atlas Specialty Steel

Five of the six toxic samples from this group were collected from the 42 Inch Sewer at Atlas Specialty Steel in Welland. Various concentrations/mixtures of metals including copper, chromium, nickel, and aluminum were at or near toxic levels, and could be responsible for the toxicity. There were also occurrences of high concentrations of oil and grease.

IVACO Rolling Mill

One sample collected in January from East Discharge (#200) at IVACO Rolling Mills was acutely lethal to *Daphnia*. This sample had a high pH (9.4), moderately high concentrations of zinc (810 ug/l) and copper (20 ug/l), oil and grease (5 mg/l), and a mixture of low concentrations of volatile organic compounds such as di, tri, and tetrachloroethylenes, benzene, toluene and xylene. All these compounds could have contributed to the toxicity of this sample.

Rainbow Trout Toxicity Test Results

Results for 220 rainbow trout toxicity tests conducted on 220 samples of effluent and intake water were submitted by the seven companies in this sector. An additional 29 audit toxicity tests were conducted by the Aquatic Toxicity Unit of Environment Ontario, and have been included in this report. There are four outstanding requests for resubmission of data due to data entry errors. The database includes 218 test results for integrated mills and 31 test results for the specialty mills. The overall distribution of toxicity of these effluents to rainbow trout is illustrated in Figure 1. Fewer samples were acutely lethal to trout than to *Daphnia*. There were also fewer trout tests with partial mortalities than *Daphnia* tests. Samples which were toxic to trout were not necessarily toxic to *Daphnia*, and vice versa, but 28% of the lethal samples were toxic to both species. The results from audit tests were generally consistent with the results submitted by the companies.

INTEGRATED MILLS

82% of samples tested from integrated mills were not acutely lethal to trout and a further 10% had 96h LC50s > 100%. 8% of the samples were acutely lethal (96h LC50 \leq 100%) to trout.

Algoma Steel Corporation

Algoma Steel had 10 lethal samples, 9 of which were from the Bar and Strip Lagoon. Much of the toxicity from this site was probably due to cyanide (100 - 650 ug/l), ammonia (800 - 17000 ug/l), and metals (Zn, Cu, Cr). The remaining toxic sample was from the 24 Inch Coke Quench. This sample had very high levels of ammonia, and cyanide = 100 ug/l.

Dofasco Steel

There were five samples from Dofasco which were toxic to trout, and four of these were from the West Bay Front Sewer. The remaining lethal result was from a sample of intake water. It is presently unclear as to the cause(s) of toxicity for these samples.

Stelco Steel Hilton Works

There were three samples of effluent from Stelco Steel Hilton Works which were toxic to trout, and all were from the #1 60 Inch Sewer (#602). A combination of low pH (< 3.8) and high metals levels, particularly copper and chromium, were the likely causes of toxicity in these three samples.

Stelco Steel Lake Erie Works

There were no acutely lethal samples from Stelco Steel Lake Erie Works.

SPECIALTY STEEL/MINI MILLS

There were no acutely lethal samples from any of the specialty steel/mini mills.

Conclusions

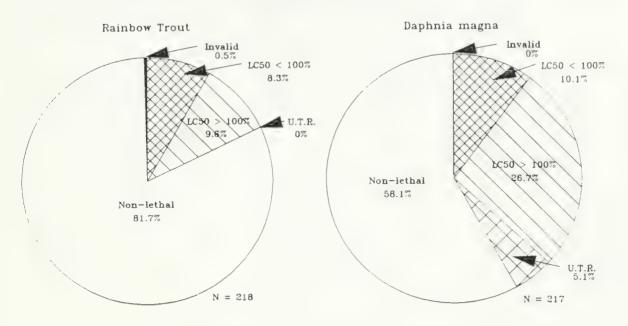
In general, *Daphnia magna* was more sensitive than trout to iron and steel mill effluents, although there were a few cases where samples caused mortality in trout, but not toxic to *Daphnia*. Effluents from integrated mills were more toxic to trout than were samples from specialty/ mini mills, and this toxicity may be due to high concentrations of cyanide, ammonia, some metals (particularly copper), and occasionally to adverse pH conditions (> 9 or < 4). Toxicity of these effluents to *Daphnia* may also be due to these causes as well as high concentrations of oil and grease. 5% of integrated mill effluents caused an unusual toxic response, and these may have been due to levels of ammonia, cyanide, or nickel in the samples, and their reaction with our laboratory dilution water.

None of the effluent samples from the specialty/ mini mills were acutely lethal to trout. 19.4% of the samples were lethal to *Daphnia*, and this toxicity may be due to mixtures of metals (Cu, Zn, Cr, Ni, Al), and some occurrences of high concentrations of oil and grease and adverse pH.

Comments included under each Toxicity Test Report were submitted by the company and their representatives and they should not be expected to be consistent throughout the reports.

- Figure 1: Status of acute lethality data for the Iron and Steel Sector. Integrated mills are Algoma Steel Corporation, Dofasco Steel, Stelco Steel Hilton Works and Stelco Steel Lake Erie Works. Specialty steel/mini mills include Atlas Specialty Steel, Lake Ontario Steel Company and TVACO.
 - U.T.R. (unusual toxic response) when the greatest number of mortalities occur in a middle effluent concentration and not the highest concentration tested.

Integrated Mills



Specialty Steel / Mini Mills

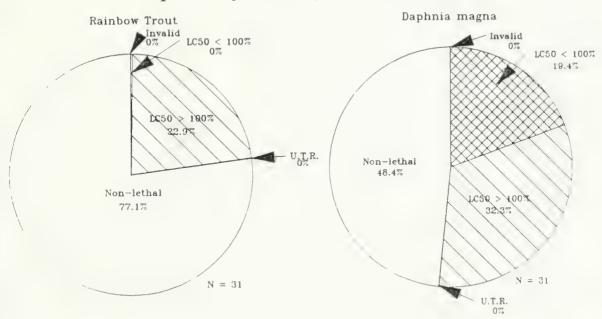


Figure 2: Toxicity of effluent samples from the Bar and Strip Lagoon (#100) at Algoma Steel Corporation, Sault Ste. Marie.

□ - Rainbow Trout

Δ - Daphnia magna

Solid symbols are results from Ministry audit tests.

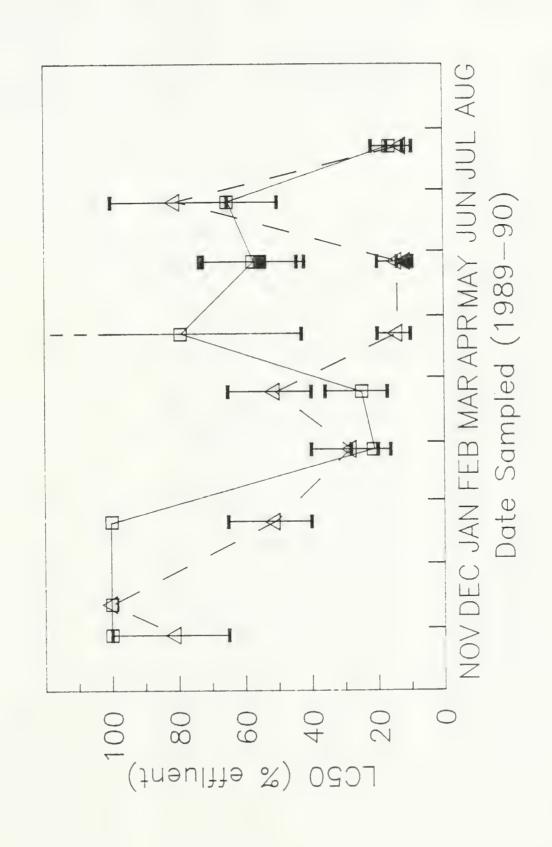


Figure 3: Toxicity of effluent samples from the #1 60 Inch Sewer (#602) at Stelco Steel Hilton Works, Hamilton.

□ - Rainbow Trout
 △ - Daphnia magna
 Solid symbols are results from Ministry audit tests.

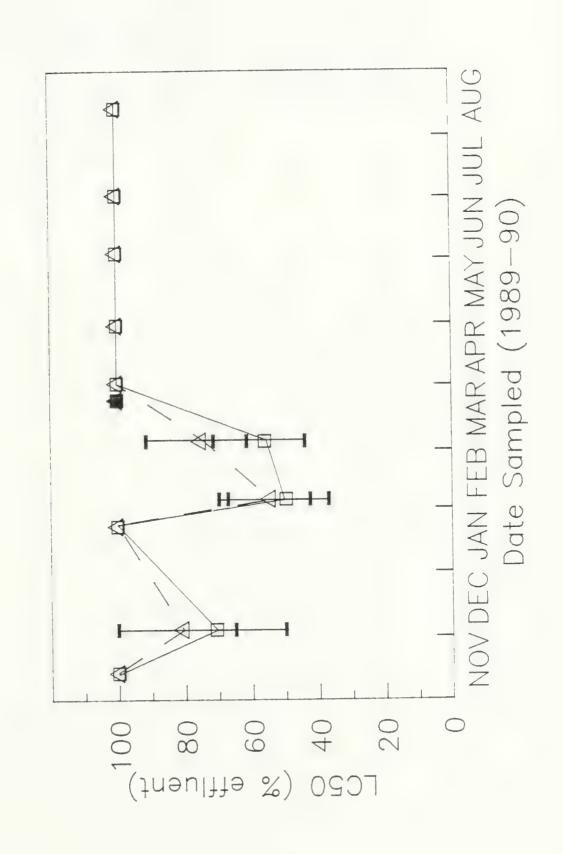


Figure 4: Toxicity of effluent samples from the #2 Rod Mill (#1100) at Stelco Steel Hilton Works, Hamilton.

□ - Rainbow Trout
 △ - Daphnia magna
 Solid symbols are results from Ministry audit tests.

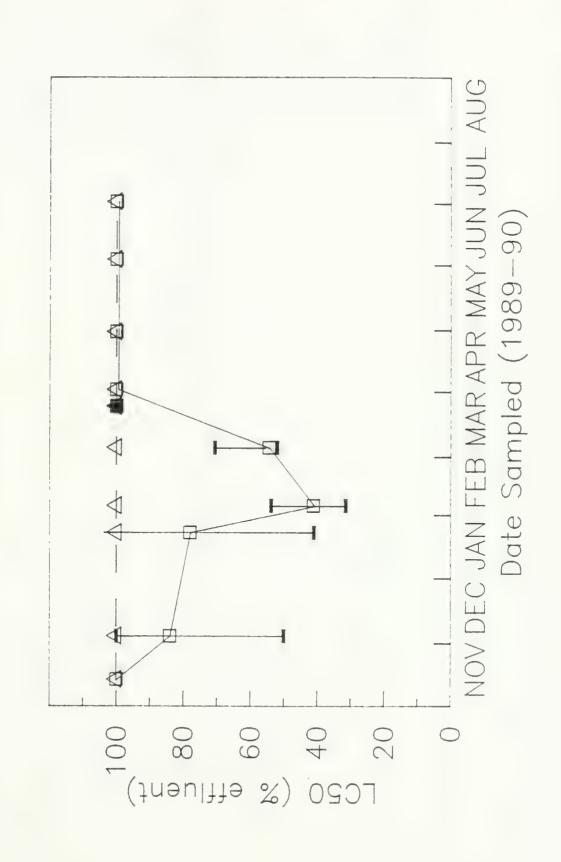
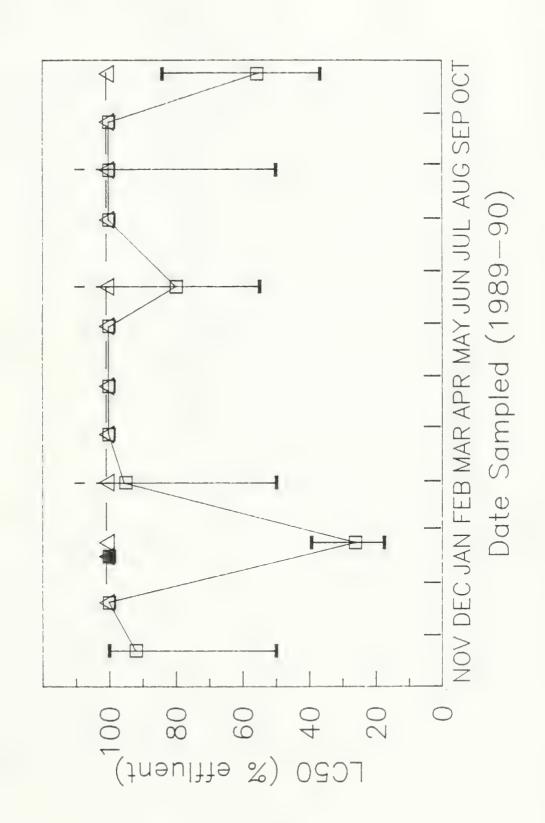


Figure 5: Toxicity of effluent samples from the 42 Inch Sewer (#100) at Atlas Specialty Steel, Welland.

□ - Rainbow Trout △ - Daphnia magna

Solid symbols are results from Ministry audit tests.





Algoma Steel, Sault Ste. Marie COMPANY:

(40006)

SECTOR: Tron and Steel

REGION: Northeast

SUMMARY

The data for 52 acute lethality trout bioassays conducted on effluent samples collected between November 1989 and July 1990 were submitted by Algoma Steel Corporation. The company was not in operation during part of July , August and September, therefore no tests were conducted for these months.

Samples from the 60" Sewer, 30" Sewer, Tube Mill, Cold Mill 24 inch, Terminal Settling Basin, Boiler House, #2 Steel Making Cooling Water, Cold Mill 20 inch, Cold Oven Condenser, and #2 Tube Mill were either not acutely lethal to trout or had 96 h LC50s >100 %. All the Ministry audit samples collected from the above sites were determined to have been not acutely lethal to trout.

The samples collected from the Bar and Strip Lagoon were found to have been consistently lethal to test fish. Eight of nine samples were determined acutely lethal to trout, producing 96 h LC50s in the range from 11.5 % to 80.6 %. The sample collected in December 1989 was nonlethal. A Ministry audit sample, collected in May, was also determined to have been acutely lethal, producing a 96 h LC50 of 11.5 %. Another Ministry audit sample, collected from the 24 inch Coke Oven Quench discharge proved lethal. The May 1990 sample, when tested, produced a 96 h LC50 of 59.3%.

Bar & Strip Lagoon

03890311 sampled: 11/28/89 LC50: 80.6 % 95% fid. limits: 65.0 - 100.0 % comments:

03890362 sampled: 12/13/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900073 sampled: 01/22/90 LC50: 51.0 %

95% fid. limits: 40.0 - 65.0 %

comments:

28.3 % 03900156 sampled: 02/26/90 LC50:

95% fid. limits: 20.0 - 40.0 %

comments:

	(
03900246 sampled: 0 95% fid. limits: comments:	03/26/90 40.0 - 6	LC50:	51.0 %
03900328 sampled: 0 95% fid. limits: comments:	14/23/90 10.0 - 2	LC50:	14.1 %
03900423 sampled: 0 95% fid. limits: comments: Lethal	05/28/90 10.0 - 2	LC50:	14.1 %
01900099 sampled: 0 95% fid. limits: comments: MISA Aud	9.4 - 1		11.5 %
03900533 sampled: 0 95% fid. limits: comments:	65.0 - 10	LC50:	80.6 %
03900626 sampled: 0 95% fid. limits: comments:	9.4 - 1	LC50: .6.9 % slope:	12.6 % 5.5
60 inch Sewer			
03900152 sampled: 0 95% fid. limits: comments: Non-leth		non-lethal	
01900089 sampled: 0 95% fid. limits: comments: MISA Aud	0.0 - lit; Non-le	non-lethal 0.0 % thal	
03900534 sampled: 0 95% fid. limits: comments: Non leth	06/25/90 0.0 -	non-lethal	
30 inch Sewer			
03900151 sampled: 0 95% fid. limits: comments: Non-leth	0.0 -	non-lethal	
03900535 sampled: 0 95% fid. limits: comments: Non leth	0.0 -	non-lethal 0.0 %	

Tube Mill

03890312 sampled: 11/27/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03890364 sampled: 12/13/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900070 sampled: 01/22/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900149 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test--Non-lethal

LC50: >100 % 03900247 sampled: 03/26/90

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; 5% mort.@ 100%

03900329 sampled: 04/23/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non lethal; single concentration test

01900092 sampled: 05/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: MISA Audit: Non-lethal

03900424 sampled: 05/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

03900536 sampled: 06/25/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

03900627 sampled: 07/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

Cold Mill 24 inch

03900148 sampled: 02/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

01900097 sampled: 05/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900537 sampled: 06/25/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non lethal

Cold Mill Storm Sewer

Terminal Settling Basin

03890313 sampled: 11/27/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03890365 sampled: 12/13/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900071 sampled: 01/22/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900153 sampled: 02/26/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test--Lethal

03900248 sampled: 03/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900330 sampled: 04/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900425 sampled: 05/28/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

01900098 sampled: 05/28/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900538 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900628 sampled: 07/23/90 non-lethal

95% fid. limits: 0.0 - 0.0%

comments: Non lethal; single concentration test

Boiler House

03900426 sampled: 05/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900539 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

Intake Water

#2 Steel Making CW

03900150 sampled: 02/26/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

01900094 sampled: 05/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900540 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

#1 Thickener

#2 Thickener

By-products Area

Cold Mill 20 inch

03900154 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

01900093 sampled: 05/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900541 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

Coke Oven Condenser

03900155 sampled: 02/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

01900090 sampled: 05/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900542 sampled: 06/25/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

Rain Gauge

#2 Tube Mill

03890314 sampled: 11/27/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03890363 sampled: 12/13/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900072 sampled: 01/22/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900147 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test--Non-lethal

03900249 sampled: 03/26/90 non-lethal

95% fid. limits: 0.0 - 0.0%

comments: Single Concentration Test; non-lethal

03900331 sampled: 04/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900368 sampled: 05/07/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900427 sampled: 05/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non lethal

01900100 sampled: 05/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit: Non-lethal

03900543 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

03900625 sampled: 07/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

#1 Thickener EO

24 inch Coke Ouench

01900096 sampled: 05/23/90 LC50: 59.3 %

95% fid. limits: 50.9 - 71.5 %

comments: MISA Audit

Sample Number: 03890311 00000 Sample: 03890311 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY Bar & Strip Lagoon, (100) : Algoma Steel Sault Ste. Marie, ONI (40006) : Northeast : Iron and Steel : BAR : Grab : B. Murray : 11/28/89 : 11/29/89 : 11/30/89 at: 1330 TOXICITY TEST REPORT 00:00 24:00 48:00 72:00 96:00 - 100.0 000000 : Rainbow trout TIME 000000 65.0 90.08 000000 ELAPSED 000000 Laboratory Sampling Method Sampled By Date Collected Received Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 000000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 65 40 20 10 Control Company TEST CONC. અદ

SLOPE of Mortality Curve : LC50 Calculated By : Geometric Mean

TOXICITY TEST PARAMETERS

	00:96
	72:00
M M	48:00
1 0	24:00
ELAPSE	00:00
TEST CONC.	×

	8.1 9.5 447 14.0	8.2 9.3 497 14.0	8.3 9.4 536 14.0	8.5 9.7 552 14.0	8.3 9.2 551 14.0
	14.5	14.5	14.5	14.5	14.5
	14.5	14.5	14.5	14.5	14.5
7.9 9.8 358 15.0	15.0	15.0	15.0	15.0	15.0
7.8 10.4 349 14.0	7.8 10.2 410 14.0	7.8 10.0 505 14.0	7.8 9.5 577 14.0	7.8 9.3 552 14.0	7.8 9.1 576 14.0
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
100	59	07	20	10	Control

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03890362

TOXICITY TEST REPORT

Sample Number: 03890362	TEST E L A P S E D T I CONC.		02 ppm 10.3 Cond. 306 Temp(C) 15.0 14.0 1	65 pH 7.8 02 ppm 9.9 cond. 392 Temp(C) 15.0 14.0 1	40 pH 7.8 02 ppm 9.3 Cond. 457	G s	Cond. 508 Temp(C) 15.0 14.0	10 pH 7.8 02 ppm 8.6 cond: 533	()	5 pH 7.8 02 ppm 8.6 cond. 545 Temp(C) 15.0 14.0	Control pH 7.8 02 ppm 8.3 Cond. 556 Temp(C) 15.0 14.0		
	ONT	л, (100)		800	STAIIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).			TOTAL MORTALITY	ж	0000	000	3	-¢
	: Algoma Steel Sault Ste. Marie, ONT (40006) : Northeast		BAR Grab R. King	: 12/13/89 : 12/15/89 : 12/18/89 at: 80	: STATIC (Protocol to deter of liquid effluen	: Rainbow trout		PSED TIME	00:00 24:00 48:00 72:00 96:00		000	Non-Lethal	Non lethal
TEST CONDITIONS	Company Region Industry	Control point	Laboratory Sampling Method Sampled By	Date Collected Received Tested	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	TEST E L A F	% 00:00 Z4:	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 otrol	96 Hour LC50	95% fid. (imits Comments

8.5 10.2 529 14.0

14.0 14.0

8.3 9.9 400 14.0

14.0 14.0

8.1 10.0 308 14.0

14.0

14.0

8:00 72:00 96:00

E E

8.4 9.9 457 14.0

14.0

14.0

8.5 10.1 505 14.0

14.0 14.0

8.5 10.0 541 14.0

14.0

14.0

8.5 10.1 556 14.0

14.0 14.0

SLOPE of Mortality Curve : LC50 Calculated By : Geometric Mean

TEST COMPLITIONS									1
IEST CONDITIONS		Sample	Sample Number: 03900073	173					
Сопрапу	: Algoma Steel Sault Ste. Marie, ONT (LONG)	TEST CONC.	ELAR	PSED	T	ш			
Region Industry	: Northeast : Iron and Steel	ж		0 00:00	00:00 04:00 24:00 48:00 72:00 96:00	00 48:	00 72:	:96 00	00
Control point	: Bar & Strip Lagoon, (100)	100	На	8.1	8.1				
Laboratory Sampling Method Sampled By	: BAR : Grab : B., Murray		02 ppm Cond. Temp(C)	10.2 268 15.0	10.2 268 15.0				
Date Collected Received Tested	: 01/22/90 : 01/25/90 : 01/26/90 at: 1500	99	pH 02 ppm Cond. Temo(C)	8.0 368 15.0	8.0 9.8 368 15.0				
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm Cond.	8.0 9.6 431					8.9
Test Animal	: Rainbow trout		Temp(C)	15.0	15.0 14	14.5 14	14.5 14.	2	0.
Weight(gm) Length(mm) MORTALITY DATA		50	pH 02 ppm Cond. Temp(C)	7.9 9.5 490 15.0	15.0 14	14.5 14	14.5 14.5	10	8.4 9.9 488 15.0
TEST ELAP	SED TIME TOTAL MORTALITY	10	pH 02 ppm	9.6				Ø) Ov 12	8.00
00:00 04:00	00 24:00 48:00 72:00 96:00		Temp(C)	15.0	15.0 1	14.5 14	14.5 14	14.5 15	0.0
100 0 10 65 0 10 40 0 0 20 0 0	10 10 10 10 10 10 10 10 10 10 10 10 10 1	'n	pH 02 ppm Cond. Temp(C)	8.0 9.3 519 15.0	15.0 14	14.5 14	14.5 14	16.5 15	8.4 10.0 521 15.0
0 0 0 otrol 0	000	Control	pH 02 ppm Cond. Temp(C)	7.9 9.1 540 15.0	15.0 1	14.5 14	14.5 14	14.5 19	8.5 9.9 5.43
96 Hour LC50	ж								
95% fid. limits	: 40.0 - 65.0 %								
Comments									

Geometric Mean

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900156

TOXICITY TEST REPORT

MISA Trout							STC 1C5	PE of O cal	SLOPE of Mortality Curve LC50 Calculated By :	Curve :		Geometric Mean	lean
	TOXICI	TY TE	CITY TEST REPORT	JRT	Sample: 03900246	900246	T0X	ICITY	TOXICITY TEST PARAMETERS	ETERS			
TEST CONDITIONS	: Algom	a Stee	-				Sam	ple N	Sample Number: 03900246	9520			
Region Industry	Sault Ste. Mar (40006) : Northeast : Iron and Steel	Ste. 6) east and St	Sault Ste. Marie, ONT (40006) Northeast Iron and Steel	ONI			TEST CONC.	⊢ ບໍ່	E L A	P S E	D T 01:00	T I M E	00:00
Control point Laboratory Sampling Method Sampled By	BAR Grab B. M	Strip	& Strip Lagoon, (100)	nn, (1	(00)		100		pH 02 ppm Cond. Temp(C)	9.2 11.5 293 14.0	9.2 11.5 293 14.0	14.0	
Nate collected Received Tested		288	at: 9	910			9	92	pH 02 ppm Cond. Temp(C)	8.6 10.8 386 14.0	14.0	8.6 10.8 386 14.0	14.0
Type of Bloassay		ocol 1 quid e	o dete ffluen ut	rmine its to	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Rainbow trout	ility 33).	4	07	pH OZ ppm Cond. Temp(C)	8.3 10.5 447 14.0	14.0	14.0	14.0
Weight(gm) Length(mm) MORTALITY DAIA	•• ••						2	50	pH O2 ppm Cond, Temp(C)	8.1 10.4 495 14.0	14.0	14.0	
TEST ELAPSED CONC. 00:00 01:00 02:00	0	T I M	E M 24:00 48:00 72:00	48:00	TOTAL MORTALITY 72:00	3°C	-	10	pH O2 ppm Cond. Temp(C)	8.0 10.4 516 14.0	14.0	14.0	14.0
100 0 8 65 0 0 0 20 0 0 0	08000	55000	55000	55000	00000	0001		10	pH 02 ppm Cond. Temp(C)	8.0 9.4 527 14.0	14.0	14.0	
ontrol 0		000	000	000	000	000	Con	Control	pH 02 ppm cond. Temp(C)	8.0 8.9 538 14.0	14.0	14.0	14.0
96 Hour LC50 95% fid. limits	: 51.0	* '	65.0	%									
Comments	••												

8.4 9.1 484 14.0

15.0

14.0 14.5

15.0

14.0 14.0 14.5

14.0

:00 02:00 04:00 24:00 48:00 72:00

8.4 9.1 513 14.0

15.0

14.0 14.0 14.5

8.2 8.5 526 14.0

15.0

14.5

14.0

8.4 8.6 535 14.0

14.5 15.0

14.0

TOXICITY	CITY TEST REPORT	RI	San	Sample: 039	03900328	TOXICIT	
TEST CONDITIONS						Samo	0
Company : Algo Saul	Algoma Steel Sault Ste. Marie,	ONT				TEST	,
Region : Nort	Northeast Iron and Steel					34	
Control point : Bar	& Strip Lagoon,	n, (100)	•			1001	
Laboratory BAR Sampling Method Grab Sampled By B. Mt Date Collected 04/22 Received 04/22 Tested 04/25	Jr 8 9 8 9 8 9 8 9 8 9 9 9 9 9 9 8 1 5 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1455				99	
Type of Bioassay : STATIC (Proto of Liq	STATIC (Protocol to determine of liquid effluents to		he act ish.	the acute lethality fish. OME, 1983).	lity 3).	07	
Test Animal : Rair Weight(gm) : Length(mm) :	Rainbow trout					20	
MORTALITY DATA							
TEST ELAPSED CONC.	TIME		MOM	TOTAL MORTALITY		10	
% 00:00 01:00 02:00	01:00 02:00 04:00 24:00 48:00	48:00 7	72:00 96:00	00:96	34		
100 0 10 10 10 10 10 10 10 10 10 10 10 1	00000	00000	00000	50000	000100000000000000000000000000000000000	r.	
00		00	00	00	00	Confron	5
96 Hour LC50 : 14.1	24						
95% fid. limits : 10.	10.0 - 20.0	×					
Comments							

SLOPE of Mortality Curve : LC50 Calculated By : Geometric Mean

TOXICITY TEST PARAMETERS

ample Number: 03900328

ELAPSED

00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00

8.2 8.9 538 15.5	8.8 525 15.5	5.09 5.09 5.51				
15.5	15.5	15.5				
15.5	15.5	15.5				
15.5	15.5	15.5	8.4 9.5 481 15.5			
15.0	15.0	15.0	15.0			
15.0	15.0	15.0	15.0			
15.0	15.0	15.0	15.0	8.1 9.3 438 15.0	8.3 9.4 362 15.0	8.9 9.8 256 15.0
7.9 8.9 550 15.0	9.3 537 15.0	9.2 523 15.0	8.0 9.3 494 15.0	8.1 9.3 438 15.0	8.3 9.4 362 15.0	8.9 9.8 256 15.0
t pH 02 ppm Cond. Temp(C)	02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Control		2	20	07	9	100

## Algona Steel Sault Ste. Marie, ONI (4006)		TOXICITY		TEST REPORT	ORI	SS	Sample: 0.	03900423	¥
## Algoma Steel Salut Stee	ST CONDITIONS								l on
y : Horrheast point : Bar & Strip Lagoon, (100) ry : BAR g Hethod : Grab	трапу		oma Ste it Ste. 006)	el Marie	ONI				10
ratory is BAR (100) ratory is BAR (100) ratory is BAR (100) restory is BAR (100) restory is BAR (100) Received (100,781/90) at: 920 Received (105/281/90) at: 920 Received (105/281	gion dustry		theast n and S	teel					
Ing Method : BAR	ntrol point			p Lago		(0)			1
of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout : Rainbow trout : Rainbow trout : Rainbow trout : LITY DATA	poratory mpling Method mpled By te Collected Received Tested	8AF 67 6 05/005/005/005/005/005/005/	Burray 28/90 30/90 31/90		920				
Animal : Rainbow trout tt(gm) : th(mm) : th(mm) : th(mm) : th(mm) : th(mm) : th(mm) : E L A P S E D	oe of Bioassay	STA (Pr	TIC otocol liquid	to dete effluer	ermine its to	the ac	ute leth	nality 283).	
E L A P S E D T I M E MORTALITY 00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00 % 0 10 10 10 10 10 10 10 10 10 100 0 10 10 10 10 10 10 10 100 0 0 10 10 10 10 10 10 100 0 0 0 0	st Animal ght(gm) ngth(mm)		nbow tr	out					
E L A P S E D T I M E MORTALITY 00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00 % 0 10 10 10 10 10 10 10 10 10 100 0 10 10 10 10 10 10 10 100 0 0 10 10 10 10 10 10 10 0 0 0 0	STALITY DATA								
00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00	E L A	ш	••			M	TOTAL		
10 0 10 10 10 10 10 10 10 10 10 10 10 10		0 02:00	00:50		48:00	72:00	00:96	**	
LC50 : 14.1 % Limits : 10.0 - 20.0 % : Lethal) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000-000	00000	000000	5555000	000000	500000	000000000000000000000000000000000000000	0
limits : 10.0 - 20.0 % : Lethal		14	-						
: Lethal	5% fid. limits			20.0	*				
	omments		Jar					\$	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

8.6	8.2 8.2	8.0	7.9	7.9	7.9
9.2	8.8 8.8	8.6	8.5	8.5	8.9
372	440 440	488	515	527	539
15.0	15.0 15.0	15.0	15.0 15.0	15.0 15.0	15.0 15.0
COZ ppm Cond. Temp(C) 65 pH Cond Cond	40 pH 02 ppm Cond.	20 pH 02 ppm Cond.	10 pH 02 ppm cond. Temp(C)	5 pH 02 ppm Cond. Temp(C)	Control pH O2 ppm Cond. Temp(C)

SLOPE of Mortality Curve : Spearman-Karber LC50 Calculated By :

PARAMETERS	: 01900099 ELAPSED TIME 00:00 04:00 25:00 48:30 71:00 96:00	8.9 8.9 (c) 15.0 (c)	8.2 240 (C) 15.0 15.0 xn 9.7 (C) 15.0		7.7 7.7 7.8 7.8 7.8 7.8 7.8 2.8 2.3 9.3 9.7 9.7 9.7 9.2 9.3 9.3 9.7 9.7 9.7 9.2 9.3 9.3 9.7 9.7 9.2 9.2 9.3 9.7 9.7 9.2 9.5 265 265 265 265 265 265 265 265 265 26
TOXICITY TEST PARAMETERS	Sample Number: 01900099 TEST E L A P S CONC.	100 pH COPPIN COPING. Temp(C) 65 pH COP ppm COPING.	40 pH 02 ppm 02 ppm 000d. 30 pH 02 ppm 02 ppm 02 ppm	20 pH 0.2 ppm 0.2 ppm 0.2 ppm 0.2 ppm 0.2 ppm 0.3 ppm	1 pH 02 ppm 02 ppm Cond. 1 temp(C) 02 ppm Cond. Temp(C)
TOXICITY TEST REPORT Sample: 01900099	Company : Algoma Steel Sault Ste. Marie, ONI (40006) : Northeast Industry : Iron and Steel	Control point : Bar & Strip Lagoon, (100) Laboratory : MOE Sampling Method : Grab Sampled By : L. McCormack Date Collected : 05/28/90 Tested : 06/01/90 at: 1000	Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Test Animal : Rainbow trout Weight(gm) : Length(mm) :	TEST E L A P S E D T I M E MORTALITY X 00:00 04:00 25:00 48:30 71:00 96:00 X 00:00 04:00 25:00 48:30 71:00 96:00 X 00:00 04:00 10 10 10 10 10 10 10 10 10 10 10 10 1	96 Hour LC50 : 11.5 % 95% fid. limits : 9.4 - 14.0 % Comments : MISA Audit

SLOPE of Mortality Curve : 5.5 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample: 03900626

Sample Number: 03000626	ELAPSED TIME	00:00 01:00 24:00 48:00 72:00 96:00		pH 9.0 9.0 02 ppm 9.8 9.8 Cond. 294 294 Temp(C) 16.0 15.5	DH 8.3 8.3 02 ppm 9.7 9.7 Cond. 391 391	0.01 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03		pH 7.9 8.1 02 ppm 9.4 9.4 cond. 492 501	16.0 15.5	02 ppm 9.4 9.2	16.0 15.5 15.5 15.0 14.5	PH 7.8 8.4 02 ppm 9.3 5.19 15.5 15.0 14.5 14.5	PH 7.8 8.3 02 pon 9.3 9.1 542 542 535 Temp(C) 16.0 15.5 15.5 15.0 14.5 14.5		
N e lome?	TEST	CONC.		100	59	- 40	J.	20 p	-	10	J F	8	Control p		
						the acute lethality fish. OME, 1983).					ж	000000	200		
	: Algoma Steel Sault Ste. Marie, ONI	(40006) : Northeast : Iron and Steel	: Bar & Strip Lagoon, (100)	: BAR : Grab : B. Murray : 07/21/00	: 07/25/90 at: 1610	: STATIC (Protocol to determine the acute of liquid effluents to fish. OM	: Rainbow trout			PSED TIME TOTAL MORTALITY	00:00 01:00 24:00 48:00 72:00 96:00	0 10 10 10 10 0 0 0 0 0 0 0 0 0 0 0 0 0	000	: 12.6 %	

	, ONT	(200)	1030	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).			TOTAL MORTALITY	34	000000	
	Algoma Steel Sault Ste. Marie, (40006) Northeast Iron and Steel	60 inch Sewer,	BAR Grab B. Murray 02/26/90 02/28/90 03/01/90 at:		Rainbow trout		ED TIME	48:00 72:00 96:00	000000	Non-lethal
TEST CONDITIONS	Company :	Control point :	Laboratory Sampling Method Sampled By Date Collected Received	Type of Bioassay :	Test Animal .: Weight(gm) : Length(mm) ::	MORIALITY DATA	TEST ELAPSICONC.	x 00:00 54:00 v	100 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	96 Hour LC50 :

TOXICITY TEST PARAMETERS

Sample: 03900152

TOXICITY TEST REPORT

03900152
Number:
Sample

9	00:00	7.9 9.7 123 14.0	8.0 9.4 285 14.0	8.3 9.8 384 14.0	8.4 9.7 472 14.0	8.4 9.7 509 14.0	8.4 9.5 524 14.0	8.4 9.4 558 14.0
9	72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
	7 00:97	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	24:00 4	14.5	14.5	14.5	14.5	14.5	14.5	14.5
APSE	00:00	7.8 9.9 114 15.0	7.9 9.3 274 15.0	7.9 9.0 379 15.0	7.9 8.9 463 15.0	7.9 8.8 502 15.0	7.9 8.7 518 15.0	7.9 8.1 544 15.0
E L		pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	1 pH 02 ppm Cond. Temp(C)				
TEST CONC.	P.	100	99	07	20	10	rv	Control

TOXIC	ICITY TEST REPORT Sample: 01900089		TOXICITY TEST PARAMETERS	RS		
TEST CONDITIONS			2000000			
Company : Al	Algoma Steel Sault Ste. Marie, ONT	TEST	TEST E LAPS	E D	™ M E	
Region : North Industry : Iron	(word) Northeast Iron and Steel			:00 01:0	00:00 01:00 02:00 25:00	2:00
Control point : 60	60 inch Sewer, (200)	100	77	, ,	7 2	7 7
Sampling Method : Grab Sampled By : L. Mc	ab McCormack 73,00		ph 02 ppm Cond. Temp(C)	9.5 90 15.0	9.0	9.5 130 15.0
• •• ••	05/25/90 05/25/90 at: 1100	59	pH 02 ppm cond. Temp(C)		7.7 9.0 150 15.0	7.7 9.4 200 15.0
Type of Bioassay : ST (P	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07			8.9	7.7
	Rainbow trout		Temp(C)		15.0	15.0
th(mm)		30			8.8	7.7
MORTALITY DATA			Cond. Temp(C)		15.0	15.0
TEST ELAPSED	T I M E TOTAL MORTALITY	20			7.7	7.6
00:00 01:00 02:00	00 25:00 49:00 69:00 96:00	24	Temp(C)		15.0	15.0
00000	00000	000000000000000000000000000000000000000	pH 02 ppm Cord. Temp(C)		7.9 8.9 250 15.0	7.5 9.2 305 15.0
000	000	0 0	rol pH 02 ppm Cond. Temp(C)		7.7 8.7 260 15.0	7.2 8.9 315 15.0
96 Hour LC50 : N	Non-lethal					
95% fid. limits :	% 0.0 - 0.0					
Comments : MISA	sA Audit; Non-lethal					

9.77 9.77 15.00 15

00:96 00:69 00:65

TOXICITY TEST PARAMETERS

Sample: 03900534

TOXICITY TEST REPORT

Company	: Algoma Steel Sault Ste. Marie, ONT (40006)	
Region Industry	: Northeast : Iron and Steel	
Control point	: 60 inch Sewer, (200)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : B. Murray : 06/25/90 : 06/27/90 : 06/28/90 at: 1535	
Type of Bioassay	: STATIC (Protocol to determine of liquid effluents to	e the acute lethality ofish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout	
MORTALITY DATA		
TEST E L A P	SED TIME	TOTAL MORTALITY
% 00:00 24:00	00 48:00 72:00 96:00	34
100 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000	000000
96 Hour LC50	: Non-tethal	
95% fid. limits	: 0.0 - 0.0 :	
Comments	Non lethal	

8.3 9.5 456 15.5

15.5

15.5

15.5

7.9 8.9 457 16.0

pH 02 ppm Cond. Temp(C)

20

8.4 9.5 491 15.5

15.5

15.5

15.5

7.9 8.7 501 16.0

pH 02 ppm Cond. Temp(C)

10

8.4 9.3 511 15.5

15.5

15.5

15.5

7.9 8.8 513 16.0

pH 02 ppm Cond. Temp(C)

'n

15.5

15.5

15.5

pH O2 ppm Cond. Temp(C)

Control

7.9 9.7 116 15.5

15.5

15.5

15.5

7.9 9.4 111 16.0

pH 02 ppm Cond. Temp(C)

100

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

TEST CONC.

Sample Number: 03900534

8.3 273 15.5

15.5

15.5

15.5

7.9 9.3 281 16.0

pH 02 ppm Cond. Temp(C)

9

8.3 9.5 375 15.5

15.5

15.5

15.5

7.9 9.2 374 16.0

pH 02 ppm Cond. Temp(C)

07

TOXICITY TEST REPORT Sample: 03900151	Sault Steel Sault Ste. Marie, ONI (40006) Northeast : Iron and Steel	30 inch Sewer, (300) BAR Grab B. Murray 02/28/90 02/28/90 03/01/90 at: 1015	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Rainbow trout	E D T I M E TOTAL	48:00 72:00	
TEST CONDITIONS	Company Region Industry	Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay Test Animal Weight(gm)	MORTALITY DATA TEST E L A P S	. 00:00 24:0	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

TOXICITY TEST PARAMETERS

Sample Number: 03900151

7.6 9.0 142 14.0	8.1 9.5 299 14.0	8.3 9.7 396 14.0	8.2 9.2 471 14.0	8.9 8.9 521 14.0	8.3 9.6 533 14.0	8.3 9.2 544 14.0
14.0	14.0	14.0	14.0	14.0	14.0	14.0
14.5	14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5	14.5
7.8 9.9 136 15.0	7.9 9.5 291 15.0	7.9 9.4 391 15.0	7.9 9.3 467 15.0	7.9 9.2 508 15.0	7.9 9.1 525 15.0	7.9 8.2 542 15.0
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond.					
100	99	07	20	10	50	Control

CONDITIONS		
Company	: Algoma Steel Sault Ste. Marie,	ONT
Region Industry	: Northeast : Iron and Steel	
Control point	: 30 inch Sewer, (3	(300)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : B. Murray : 06/25/90 : 06/27/90 : 06/28/90 at: 1540	07
Type of Bioassay	: STATIC (Protocol to determine of liquid effluents to	rmine the acute lethality ts to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	
MORTALITY DATA		
CONC.	SED TIME	TOTAL MORTALITY
00:00 24:00	0 48:00 72:00 96:00	ж
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000	000000
96 Hour LC50	: Non-lethal	
95% fid. limits	0.0 - 0.0 :	*
Comments	· Non Lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

		00:90	7.8 9.3 154 15.5	8.2 9.4 296 15.5	8.2 9.4 393 15.5	8.4 9.5 464 15.5	8.3 9.4 498 15.5	8.4 9.5 516 15.5	8.4 9.5 532 15.5
		48:00 72:00 96:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
	E E	48:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
	T 0	24:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
1900535	LAPSEI	00:00	7.8 9.3 148 16.0	7.8 9.2 291 16.0	7.9 9.1 387 16.0	7.9 9.1 459 16.0	7.9 8.9 493 16.0	7.9 8.9 515 16.0	7.8 8.8 533 16.0
Sample Number: 03900535	E		pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST	**	100	99	07	20	10	5	Control

TOXICITY TEST REPORT Sample: 03890312	: Algoma Steel Sault Ste. Marie, ONI (40006) : Northeast : Iron and Steel	: Tube Mill, (400) : BAR : Grab : B Hurray : 11,27/89 : 11,29/89 : 11,30/89 at: 1330	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	: Rainbow trout		PSED TIME TOTAL MORTALITY	24:00 48:00 72:00 96:00		: >100%	% 0.0 - 0.0 :
10X)		** ** ** ** ** **	**			P S E	34:00 48:0			**
TEST CONDITIONS	m 0 (A	Control point Laboratory Samplidy Method Sampled By Date Collected Received Tested	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	TEST E L A CONC.	00:00	100 0 65 0 40 0 20 0 10 0 Control 0	96 Hour LC50	95% fid. limits

TOXICITY TEST PARAMETERS

Sample Number: 03890312

00:96	7.6 9.2 203 14.0	8.1 9.4 346 14.0	8.2 9.6 436 14.0	8.4 9.5 501 14.0	8.4 9.4 541 14.0	8.3 9.2 572 14.0
72:00	14.5	14.5	14.5	14.5	14.5	14.5
1 M E	14.5	14.5	14.5	14.5	14.5	14.5
D T 24:00	15.0	15.0	15.0	15.0	15.0	15.0
LAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.8 10.5 187 15.0	8.1 10.3 330 15.0	7.9 10.1 425 15.0	7.8 9.7 496 15.0	7.8 9.6 536 15.0	7.8 9.4 564 15.0
E 1	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	92	07	20	10	Control

	TOXICITY TEST REPORT	Sample: 03890364	TOXICI	TOXICITY TEST PARAMETERS	HETERS		
TEST CONDITIONS			Sample	Sample Number: 03890364	90364		
Company	: Algoma Steel Sault Ste. Marie, ONI		TEST	EL	APSED	D T	I M E
Region Industry	: Northeast : Iron and Steel		CONC.		00:00 24:00 48:00	54:00	48:00 72
Control point	: Tube Mill, (400)		004	= 1			
Laboratory Sampling Method Sampled By	: BAR : Grab : R. King : 12/13/80		000	pH 02 ppm Cond. Temp(C)	10.0 230 15.0	14.0	14.0
Received	: 12/15/89 : 12/18/89 at: 820		92	pH 02 ppm cond.	9.0		
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	e acute lethality sh. OME, 1983).	70	PH OZ ppm	7.9	14.0	14.0
Test Animal Weight(am)	: Rainbow trout			Cond. Temp(C)	433	14.0	14.0
Length(mm)			50	pH 02 ppm	7.8		
MORTALITY DATA				Cond. Temp(C)	498 15.0	14.0	14.0
TEST E L A P	SED TIME	TOTAL MORTALITY	10	pH 02 ppm	7.8		
% 00:00 24:00	0 48:00 72:00 96:00	3-2		Cond. Temp(C)	530	14.0	14.0
100 65 70 70 10 10 10 10 10 10 10 10 10 10 10 10 10	00000	0000	so.	pH O2 ppm Cond. Temp(C)	7.8 8.5 545 15.0	14.0	14.0
trol 0	00	000	Control	O2 ppm Cond. Temp(C)	7.8 8.4 555 15.0	14.0	14.0
96 Hour LC50	: Non-lethal						
95% fid. limits	% 0.0 - 0.0 :						
Comments	: Non lethal						

8.35 14.00 1

14.0

14.0

14.0

14.0

14.0

3:00 72:00 96:00

14.0

14.0

7.8	8.1	8.2	8.4	8.3	8.5	8.5
9.9	9.9	9.8	10.1	9.6	10.1	10.0
135	284	383	459	498	512	545
14.5 14.5	14.5 14.5	14.5 14.5	14.5 14.5	14.5 14.5	14.5 14.5	14.5 14.5
14.5	14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5	14.5
7.8	7.9	7.9	8.0	7.9	7.9	7.9
9.6	9.5	9.1	8.7	8.7	8.8	8.6
128	279	381	462	498	517	540
15.0	15.0	15.0	15.0	15.0	15.0	15.0
pH						
02 ppm	02 ppm	O2 ppm	02 ppm	O2 ppm	O2 ppm	O2 ppm
Cond.						
Temp(C)						
100	9	07	20	10	50	

TOXICITY TEST PARAMETERS

Sample: 03900149

TOXICITY TEST REPORT

7.8 8.9 136 14.0

14.0

7.9 9.2 142 14.0

14.0

8.4 8.6 543 14.0

14.0

8.5 9.2 541 14.0

14.0

TOXICITY TEST PARAMETERS

Sample: 03900247

TOXICITY TEST REPORT

Sample Number: 03900247

TEST E L A P S E D T I M E CONC. 8 00:00 24:00 48:00 72:00 96:00

N000	N800	0000	22-40
7.7 8.9 159 14.0	7.7 8.8 159 14.0	8.2 8.0 536 14.0	8.2 8.7 531
14.5	14.5	14.5	5 71
14.5 15.0 14.5	14.5 15.0 14.5	14.5 15.0 14.5	5 71 0 51 5 71
14.5	14.5	14.5	5 71
8.3 11.1 158 15.0	8.3 11.1 158 15.0	8.0 9.7 530 15.0	8.0 9.7 530
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	рн O2 ppm Cond. Temp(C)	pH 02 ppm cond.
100	100	ontrol	ontrol

CONDITIONS			o Comas	0200010 number 03000300					
Company : Algoma Sault S	Algoma Steel Sault Ste. Marie, ONI		TEST	ELAPSED		TIME			
Region : Northeast Industry : Iron and Steel	st d Steel) 5 7 1	00:00	00:00 24:00 48:00 72:00 96:00	8:00 7	2:00 9	00:9	
Control point : Tube Mil	Tube Mill, (400)		000					7 2	
Laboratory : BAR Sampling Method : Grab Sampled By : B. Murrs	٨			pn 0.2 02 ppm 9.3 Cond. 141 Temp(C) 15.0	15.5	15.5	15.5	9.0 142 15.5	
Collected : 04/23/90 Received : 04/25/90 Tested : 04/25/90	0 0 0 at: 1500		100 pH 02 02 CO	02 ppm 8.2 Cond. 141	7.	2 2	ر د	7.6 9.1 143	
Type of Bioassay : STATIC (Protoco	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	e acute lethality sh. OME, 1983).	Control pH			3		2 2 2 2	
	trout		Tel	Temp(C) 15.0	15.5	15.5	15.5	15.5	
Weight(gm) Length(gm) :			Control pH 02 Co	D2 ppm 7.9 Cond. 551 Temp(C) 15.0	15.5	15.5	15.5	8.3 9.2 534 15.5	
APSED T	I M E	TOTAL MORTALITY							
00:00 24:00 48:00 72:00 96:00	00:96 00:	H							
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000							
96 Hour LC50 : Non-lethal	thal								
95% fid. limits : 0.0	% 0.0 -								
Comments : Non Leth	: Non lethal; single concentration test	tration test							

MISA Trout						SLOPE LC50 Ca	SLOPE of Mortality Curve LC50 Calculated By :	Curve :		
	TOXICITY TEST	EST REPORT	RT	Sample: 01900092		TOXICI	TOXICITY TEST PARAMETERS	ETERS		
TEST CONDITIONS Company Region Industry	: Algoma Steel Sault Ste. Marie, (40006) : Northeast : Iron and Steel	eel . Marie, Steel	ONI			Sample TEST CONC.	Sample Number: 01900092 TEST E L A P S CONC. 00:	APSED TIME 00:00 00:30 01:00	T 1 10:30 0	M E
Control point Laboratory Sampling Method Sampled By	: Tube Mill, MOE Grab Grab	, (400) ack				100	pH 02 ppm Cond. Temp(C)	7.8 8.4 125 15.0	8.0 9.5 130 15.0	
Date Collected Received Tested	. 05/23/90 : 05/28/90 : 05/28/90 at:		1500			99	pH O2 ppm Cond. Temp(C)		8.0 9.5 185 15.0	
Type of Bioassay	: STATIC (Protocol of Liquid	to dete	rmine its to	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).		07	pH 02 ppm Cond.		7.9	
(0 ~ ~	: Rainbow trout :	rout				30	Temp(C) pH 02 ppm Cond.		7.8 9.8 235	
MORTALITY DATA							Temp(C)		0.51	
CONC.	SED TIM	M E	02.59	TOTAL MORTALITY 96-00	54	20	DH 02 ppm Cond. Temo(C)		7.9 9.8 250 15.0	
	0000	0000	0000		0000	10	pH O2 ppm Cond. Temp(C)		7.8 9.8 260 15.0	
trol 0		000	000	000		Control	of pH 02 ppm Cond. Temp(C)		7.5 9.7 260 15.0	
96 Hour LC50	: Non-lethal	lat								
95% fid. limits	. 0.0 :	0.0 -	34							
Comments	: MISA Audit; Non-lethal	it; Non-	ethal							

7.7 9.8 12.8 12.9 17.9 17.9 17.9 15.0 15

18:30 41:30 65:30 96:00

TOXICITY TEST PARAMETERS

Sample: 03900424

TEST CONDITIONS	Sample Number: 03900424
: Algoma Steel Sault Ste. Marie, ONT	TEST ELAPSED TIME CONC.
: Northeast : Iron and Steel	% 00:00 24:00 48:00 72:00 96:00
: Tube Mill, (400)	100 pH 8.1
: BAR : Grab : B. Murray	02 ppm 9.1 Cord. 166 Temp(C) 15.0 15.0 15.5
: 05/28/90 : 05/30/90 : 05/30/90 at: 1640	100 pH 8.1 02 ppm 9.1 cond. 166 Temp(C) 15.0 15.0 15.5
Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish, OME, 1983).	7.9 8.7 538
: Rainbow trout :	G E
	Cond. 238 Temp(C) 15.0 15.0 15.0 15.5
APSED TIME TOTAL MORTALITY	
24:00 48:00 72:00 96:00 %	
: Non-lethal	
95% fid. limits : 0.0 - 0.0 %	
: Single concentration test; Non lethal	

TOXICITY TEST PARAMETERS

Sample: 03900536

96:00 7.9 7.9 15.5 15.5 16.5 16.5 17.5 17.5 17.5 17.5	15.5 15.5 8.4 9.4 15.5
7.7 140 16.0 16.0 15.5 15.5 15.5 15.5 15.5 15.5 15.5 15	15.5
1 1 M E 00 48:00 15.5 0 15.5 0 15.5	15.5
16.0	16.0
4	538 16.0 7.9 9.1 538 16.0
pH Cord. Temp(C) PH O2 ppm Cord. Temp(C)	Control pH Control pH Cond. Temp(C)
TEST CONC. % 100 100 Control	Control

SLOPE of Mortality Curve : LC50 Calculated By :

TEST CONDITIONS			100
Company : Algoma St Sault Ste (40006) Region : Northeast Industry : Iron and	Algoma Steel Sault Ste. Marie, ONT (40006) Northeast Iron and Steel	Sample Number: 03900627 TEST E L A P S CONC. % 00:0	0627 P S E 00:00
** 48 00 00 40 00 00	Tube Mill, (400) BAR Grab OF/23/90 07/25/90 at: 1620	100 pH Cond. Cond. Temp(C) 100 pH O2 ppm Cond. Cond. Temp(C) 100 pH Cond. Temp(C)	7.8 128 16.0 16.0 7.8 9.7 128 16.0
: :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	Control pH 02 ppm Cond. Temp(C)	7.8 9.4 543 16.0
Weight(gm) : Length(mm) : MORTALITY DATA		Control pH 02 ppm Cond. Temp(C)	7.8 9.4 543 16.0
TEST E L A P S E D T I M E CONC.	T I M E TOTAL MORTALITY 72:00 96:00 %		
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
96 Hour LC50 : Non-	Non-lethal		
95% fid. limits : 0.0 Comments : Non Le	: 0.0 - 0.0 % : Non lethal; single concentration test		

8.2 9.0 535 14.5

7.8 9.4 543 16.0

15.5 15.0 14.5

8.3 9.2 532 14.5

14.5

15.0

15.5

7.8 9.7 128 16.0

14.5

15.5 15.0

7.8 9.4 543 16.0

7.8 9.3 142 14.5

7.8 9.7 128 16.0

15.5 15.0 14.5

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

EST CONDITIONS Start	SHOULD LEST				
Algona Steel Sample Number: 0390014 Sample Number: 0390014 Steel	2000				
TEST FEST FL A P	••	Algoma Steel	Sample	Number: 03900	148
thod : BAR though it is cold will 24 inch, (500) thod : BAR though it is a series of the series is a series of the series of th	····	(4006) Northeast Iron and Steel	TEST CONC.	L A	P S E
ted : BAR 100 pH	0.0	Cold Mill 24 inch, (500)			
STATIC S	** ** ** **	BAR Grab B. Murray 02/26/90	100	pH O2 ppm Cond. Temp(C)	7.7 10.4 116 15.0
STATIC Condition		at:	99	pH 02 ppm	9.8
Rainbow trout Rainbow Rainbo		STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	70	Temp(C)	15.0
TOTAL TOTA		Rainbow trout		Cond. Temp(C)	374
Total			20	pH 02 ppm	7.9
E L A P S E D T I M E				Cond. Temp(C)	458 15.0
00:00 24:00 48:00 72:00 96:00	ELAPS	DIIME	10	PH CO	7.9
trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00:00	72:00 96:00		Cond.	506
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	v	pH 02 ppm cond. Temp(C)	7.9 9.1 523 15.0
: Non-lethal : 0.0 - 0.0 % : Non-lethal	ontrol 0	00	Contro		7.9
: 0.0 - 0.0 : Non-lethal		Non-lethal		Temp(C)	0.51
		0.0 -			
		Non-lethal			

	00:96	7.9 9.4 121 14.0	8.1 9.2 285 14.0	8.4 9.4 377 14.0	8.4 9.2 465 14.0	8.2 8.6 507 14.0	8.4 9.2 526 14.0	8.4 8.9 542 14.0
	24:00 48:00 72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
I M	48:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
1 0	77:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
LAPSE	00:00	7.7 10.4 116 15.0	7.9 9.8 280 15.0	7.9 9.6 374 15.0	7.9 9.3 458 15.0	7.9 9.2 506 15.0	7.9 9.1 523 15.0	7.9 8.2 543 15.0
m		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	L pH O2 ppm Cond. Temp(C)
TEST	S X	100	99	70	20	10	In .	Control

	TOXICITY TEST REPORT Sample: 01900097	TOXICI	TOXICITY TEST PARAMETERS	S S			
TEST CONDITIONS Company Region Industry	: Algoma Steel Sault Ste. Marie, ONT (40006) : Northeast : Iron and Steel	Sample TEST CONC.	Number: 01900 E L A	S E D	097 PSED TIME 00:00 00:30 01:00 19:00 42:00 66	19:00 4	2:00
Laboratory Sampling Method Sampled By Date Collected Received Tested	: Cold Mill 24 inch, (500) : MOE : Grab : L. McCormack : 05/23/90 : 05/28/90 : 05/28/90 at: 1500	100	e () e	7.5 9.1 90 15.0	7.9 100 15.0 7.8	7.6 90.7 15.0 15.0	7.6 90.5 15.0 7.8 9.6
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	Cond. Temp(C) pH O2 ppm	-	5.0 5.0 7.8	7.9	7.8
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	30	Cond. Temp(C) PH O2 ppm Cond. Temp(C)		5.0 7.8 9.8 5.0	8.0 8.0 8.0 8.0 8.0 8.0 8.0	15.0 8.0 9.7 215 15.0
TEST E L A P CONC.	ELAPSED TIME TOTAL MORTALITY MORTALITY %	20	pH OZ ppm Cond. Temo(C)	-	52.0 52.0 5.0	8.0 9.9 15.0	8.0 9.7 230 15.0
0		10	pH O2 ppm Cond. Temp(C)	_	7.8 9.8 5.55	8.0 9.9 250 15.0	8.0 9.7 250 15.0
0 0 otrol		Control	t pH 02 ppm Cond. Temp(C)	-	7.8 9.7 255 5.0	8.0 9.8 270 15.0	8.0 9.4 265 15.0
96 Hour LC50 95% fid. Limits	: Non-lethal : 0.0 - 0.0 %						
Comments	MISA Audit; Non-le						

00:96 00:99 00:

8.79 8.70 8.70

TEST CONDITIONS	Samos	Sample Number: 03900537
Company : Algoma Steel Sault Ste. Marie, ONI (4006) Region : Northeast Industry : Iron and Steel	TEST CONC.	E L A P S E 00:00
point :	100	PH 7.8
Salptical (6/25/90) Date Collected (6/27/90) Received (6/28/90) at: 1525 Tested (16/28/90) at: 1525	65	pH 7.5 02 ppm 9.5 cond. 277 Temp(C) 15.5
Type of Bioassay. : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	DH 7.9 02 ppm 9.0 Cond. 377 Temo(C) 15.0
Test Animal : Rainbow trout Weight(gm) : Length(mm) :	20	
	10	
TEST E L A P S E D T I M E HORTALITY CONC. % 00:00 24:00 48:00 72:00 96:00	3 €	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		02 ppm 9. Cond. 51 Temp(C) 15.
trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	1 pH 7. 02 ppm 8. Cond. 53 Temp(C) 15.
96 Hour LC50 : Non-lethal		
95% fid. limits : 0.0 - 0.0 %		
Comments : Non Lethal		

8.4 9.6 378 16.0 8.4 9.4 458 16.0

16.0

15.5 16.0

7.9 9.5 119 16.0 8.1 9.3 277

16.0

16.0

15.5

16.0

16.0

15.5

00:00 24:00 48:00 72:00 96:00

TIME

APSED

SLOPE of Mortality Curve : LC50 Calculated By :

8.4 9.4 501 16.0

16.0 16.0

15.5

16.0

16.0

15.5

B.5 9.6 513 16.0 16.0 8.5 9.5 536 16.0

16.0

16.0

15.5

16.0 16.0

15.5

35

	TOXICITY IEST REPORT Sample: 03890313	TOXICI	TOXICITY TEST PARAMETERS	METERS	
TEST CONDITIONS					
Company : Region : Industry :	Algoma Steel Sault Ste. Marie, ONI (40006) Northeast Iron and Steel	Sample TEST CONC.	Sample Number: 03890313 FEST E L A P S CONC. 00:	03890313 ELAPSED T 00:00 24:00	T :00:7:
	Terminal Settling Basin, (700) BAR Grab B. Murray 11/27/89	100	pH 02 ppm cond. Temp(C)	7.8 10.1 207 15.0	15.0
Received : Tested : Type of Bioassay :	11/29/89 11/30/89 at: 1330 STATIC	9	pH 02 ppm Cond. Temp(C)	7.8 9.8 341 15.0	15.0
Test Animal :	(Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Rainbow trout	07	pH O2 ppm Cond. Temp(C)	7.8 9.7 428 15.0	15.0
Length(mm) MORIALITY DATA		20	pH 02 ppm Cond. Temp(C)	7.8 9.6 500 15.0	15.0
TEST E L A P S I CONC. % 00:00 24:00	ELAPSED TIME TOTAL MORTALITY WORTALITY %	10	pH 02 ppm Cond.	7.8 9.3 539	15.0
100 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control		7.8 9.3 570 15.0	15.0
96 Hour LC50 : 95% fid. limits : Comments :	: >100% : 0.0 - 0.0 % : LC50 >100				

00:96	7.7 9.4 226 14.0	8.2 9.4 354 14.0	8.4 9.6 441 14.0	8.4 9.5 511 14.0	8.5 9.5 546 14.0	8.4 9.3 570 14.0
72:00	14.5	14.5	14.5	14.5	14.5	14.5
00:85	14.5	14.5	14.5	14.5	14.5	14.5
54:00	15.0	15.0	15.0	15.0	15.0	15.0
00:00 24:00 48:00 72:00 96:00	7.8 10.1 207 15.0	7.8 9.8 341 15.0	7.8 9.7 428 15.0	7.8 9.6 500 15.0	7.8 9.3 539 15.0	7.8 9.3 570 15.0
	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	рн 02 ррт Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
CONC.	100	99	07	20	10	Control

TOXICITY TEST REPORT	REPORT Sample: 03890365	TOXICI	TOXICITY TEST PARAMETERS	ETERS
TEST CONDITIONS			0300	9720
Company : Algoma Steel Sault Ste. Marie,	Aarie, ONI	Sample	NUMBER: USBYUSOS	P S E
Region : Northeast Industry : Iron and Steel	let	3		00:00
Control point : Terminal Set	Terminal Settling Basin, (700)	100	DH	8.1
77			02 ppm cond. Temp(C)	10.1 189 15.0
Date Lottected : 12/15/89 at:	1: 830	65	pH 02 ppm Cond.	7.9 9.6 322
Type of Bioassay : STATIC (Protocol to of liquid ef	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm	7.8
	ıt		Temp(C)	15.0
Length(mm) :		20	pH 02 ppm cond.	7.8 8.6 508
MORTALITY DATA			Temp(C)	15.0
TEST ELAPSED TIME CONC.	TOTAL MORTALITY	10	pH 02 ppm	7.7
% 00:00 24:00 48:00 72:00 9	% 00:96		Temp(C)	15.0
100 65 70 70 70 70 70 70 70 70 70 70 70 70 70	00000	ın	pH 02 ppm cond. Temp(C)	7.7 8.5 546 15.0
trol 0 0 0 0		Control	1 pH 02 ppm Cond. Temp(C)	7.8 8.7 555 15.0
96 Hour LC50 : Non-lethal				
95% fid. limits : 0.0 -	% 0.0			
Comments : Non lethal				

ity Curve :

ARAMETERS

	00:96	7.9 10.1 188 14.0	8.1 9.7 323 14.0	8.3 9.4 418 14.0	8.4 9.7 510 14.0	8.4 9.6 518 14.0	8.4 9.4 539 14.0	8.5 10.1 554 14.0
	72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
I M E	48:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
1 0	24:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
LAPSE	00:00	8.1 10.1 189 15.0	7.9 9.6 322 15.0	7.8 9.1 411 15.0	7.8 8.6 508 15.0	7.7 8.5 518 15.0	7.7 8.5 546 15.0	8.7 8.7 555 15.0
ш		pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	L pH 02 ppm Cond. Temp(C)
TEST	***	100	99	07	20	10	5	Control

8.1 9.5 416 14.5

14.5

7.7 9.8 205 14.5

5

14

8.1 9.9 329 14.5

14.5

8.3 9.8 476 14.5

14.5

8.3 9.9 504 14.5

14.5

8.7 10.2 524 14.5

5

14.

8.5 10.0 543 14.5

14.5

38

3%

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900153

00:00 24:00 48:00 72:00 96:00 ELAPSED TIME

7.7 9.7 213 14.0	7.6 9.4 213 14.0	8.4 9.5 550 14.0	8.4 9.5 551 14.0
14.0	14.0	14.0	
14.5 14.5 14.0	14.5 14.0	14.5 14.5 14.0	14.5 14.5 14.0
14.5	14.5	14.5	14.5
7.7 10.4 205 15.0	7.7 10.4 205 15.0	7.9 8.2 544 15.0	7.9 8.2 544 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
0	00	ntrol	ntrol

TOXICITY TEST PARAMETERS

Sample: 03900248

		00:96	7.4 7.6 197 14.5	7.6 8.3 198 14.5	8.4 8.4 526 14.5	8.3 8.2 525 14.5
		72:00	14.5	14.5	14.5	14.5
	TIME	48:00	15.0	15.0	15.0	14.5 15.0 14.5
		00:00 24:00 48:00 72:00 96:00	14.5	14.5	14.5	14.5
3900248	ELAPSED	00:00	8.0 11.3 199 15.0	8.0 11.3 199 15.0	7.9 9.6 529 15.0	7.9 9.6 529 15.0
Sample Number: 03900248	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST	CONC.	100	100	Control	Control

Algoma Steel Sault Stee Marie, ONT (40006) Sault Stee Mortheast Mortheast Sault Steel Northeast Iron and Steel Iron and Steel Sampling Method Grab Sampling Method Grab Grab Sampling Method Grab Gra	tling Basin, (700) : 1505 : 1505 tring Basin, (700) determine the acute lethality fluents to fish. OME, 1983). t TOTAL MORTALITY 6:00 0 0 0 0 0 0 0 0 0 0 0 0
y : (Authors) y : (Control of the point in	ling Basin, (700) 1505 determine the acute lethality luents to fish. OME, 1983). RORTALITY MORTALITY 200 0 0 0
atory : BAR BAR	ling Basin, (700) 1505 determine the acute lethality luents to fish. OME, 1983). TOTAL MORTALITY **00 *
atory is BAR ing Method is Grab ced By ing Method is Grab ced By is Murray (04/23/90 ing 04/25/90 at: 1505 ing Bioassay is STATIC (Protocol to determine of liquid effluents to a liquid is Rainbow trout it(gm) is Rainbow trout it(gm) is E L A P S E D T I M E E L A P S E D T I M E colono 24:00 48:00 72:00 96:00 colono 0 0 0 0 0 0 0 colono 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	determine the acute lethality tuents to fish. OME, 1983). TOTAL MORTALITY MORTALITY 200 200 0
of Bioassay : STATIC (Protocol to determine of liquid effluents to of liquid effluents to ttggm) : Rainbow trout : Rainbow trout : LITY DATA	determine the acute lethality luents to fish. OME, 1983). TOTAL MORTALITY X 00 0
Animal : Rainbow trout t(gm) : h(mm) : LITY DATA E L A P S E D T I M E E L A P S E D T I M E 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 0	TOTAL MORTALITY X 0 0 0 0
ELAPSED TIME ELAPSED TIME 00:00 24:00 48:00 72:00 96:00 10 0 0 0 0 10 0 0 0 0 10 0 0 0 0 10 0 0 0	TOTAL MORTALITY
D0:00 24:00 48:00 72:00 96:00 00:00 20 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0	TOTAL MORTALITY
00:00 24:00 48:00 0 0 0 1 0 0 0	**
96 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 %	
Comments : Non lethal; single concentr	single concentration test

Sample Number: 03900330

TOXICITY TEST PARAMETERS

Sample: 03900330

00:96	7.1 8.4 236 15.5	7.3 9.0 235 15.5	8.3 9.4 530 15.5	8.2 9.4 533 15.5
72:00	15.5	15.5	15.5	15.5
P S E D T I M E 00:00 24:00 48:00 72:00 96:00	15.5	15.5	15.5	15.5
D T 24:00	15.5	15.5	15.5	15.5
LAPSED 00:00 2	7.5 9.5 232 15.0	7.5 9.5 232 15.0	7.9 9.2 548 15.0	7.9 9.2 548 15.0
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

Sample Number: 03900425

TOXICITY TEST PARAMETERS

Sample: 03900425

	00:96	7.7 8.4 286 15.5	7.7 8.4 285 15.5	8.3 8.3 538 15.5	8.4 8.3 536 15.5
	72:00	15.5	15.5	15.5	15.5
TIME	48:00	15.0	15.0	15.0	15.0 15.0 15.5
	00:00 24:00 48:00 72:00 96:00	15.0	15.0	15.0	15.0
LAPSED	00:00	7.4 9.0 282 282 15.0	7.4 9.0 282 15.0	7.8 8.6 536 15.0	7.8 8.6 536 15.0
ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST		100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 01900098

TOXICITY TEST REPORT

				2000					
	P. ONI	TEST	ELAPS	E D	T I M E				
point : Method : By lected		CONC.		00:00 01:00 02:00 26:00 49:00 71:00 96:00	0 02:00 2	6:00 4	9:00 7	1:00 %	00:5
** ** ** **	ng Basin, (700)	1001	Ho	9.9	7.3	7.4	7.4	7.4	7.5
**		3	02 ppm Cond. Temp(C)	8.0 15.0	9.6	9.9 160 15.0	9.9 150 15.0	9.8 150 15.0	9.4 150 15.0
: 05/31/90 : 06/01/90 at:	1000	92	pH O2 ppm Cond. Temp(C)		7.4 9.4 185 15.0	7.3 9.5 190 15.0	7.3 9.6 180 15.0	7.4 9.5 190 15.0	7.6 9.5 190 15.0
Type of Bioassay : STATIC (Protocol to determine of liquid effluents to	termine the acute lethality ents to fish. OME, 1983).	07	DH 02 ppm Cond		7.5 9.5 215	7.5 9.9 210	7.5 9.8 185	7.7 9.7 220	7.7
Test Animal : Rainbow trout			Temp(C)		15.0	15.0	15.0	15.0	15.0
		30	pH 02 ppm cond.		7.6 9.6 225	7.7 9.8 220	7.5 9.7 210	7.6 9.3 230	7.6
MORTALITY DATA			Temp(C)		15.0	15.0	15.0	15.0	15.0
CONC.	TOTAL MORTALITY	20	pH 02 ppm Cond.		7.6 9.7 235	7.6 9.4 235	7.6 9.2 230	7.7 9.6 240	7.8 8.6 240
x 00:00 01:00 02:00 26:00 49:00 71:00	0 71:00 96:00 %		Temp(C)		15.0	15.0	15.0	15.0	15.0
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	10	pH 02 ppm Cond. Temp(C)		7.6 9.5 250 15.0	7.1 8.1 240 15.0	6.9 7.9 235 15.0	7.0 3.8 255 15.0	7.8 9.7 255 15.0
trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000	Control	of ph O2 ppm Cond. Temp(C)		7.7 9.6 260 15.0	7.5 9.9 245 15.0	7.7 9.8 250 15.0	7.8 9.7 260 15.0	7.8 9.8 265 15.0
96 Hour LC50 : >100%									
95% fid. limits : 0.0 - 0.0	*								
Comments : MISA Audit									

MISA Trout		SLOPE of Mortality Curve : LC50 Calculated By :
	TOXICITY TEST REPORT Sample: 03900538	TOXICITY TEST PARAMETERS
TEST CONDITIONS Company Region Industry	Algoma Steel Sault Ste. Marie, ONT (4006) Northeast Iron and Steel	Sample Number: 03900538 TEST E L A P S E D CONC. 00:00 24
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	Terminal Settling Basin, (700) BAR Grab B. Murray 06/25/90 06/27/90 06/28/90 at: 1530	100 pH 7.2 02 ppm 9.2 Cond. 224 Temp(C) 15.5 1 65 pH 7.6 02 ppm 9.2 Cond. 338
assay	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Rainbow trout	(C) (D)
Weight(gm): Length(mm): MORTALITY DATA		20 pH 7.8 02 ppm 9.1 Cond. 477 Temp(C) 15.5
TEST E L A P S CONC. % 00:00 24:00	E D	10 pH 7.8 02 ppm 8.9 Cond. 507 Temp(C) 15.5 1
100 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		5 pH 7.8 02 ppm 8.8 Cond. 513 Temp(C) 15.5 1 Control pH 7.8 Cond. 532 Temp(C) 15.5 1
96 Hour LC50 : 95% fid. Limits : Comments :	Non-lethal 0.0 - 0.0 % Non lethal	

7.6 9.2 224 16.0

16.0

16.0

15.5

00:00 24:00 48:00 72:00 96:00

7.7 9.3 337 16.0

16.0

16.0

15.5

8.3 9.3 414 16.0

16.0

16.0

15.5

8.4 9.3 471 16.0

16.0

16.0

15.5

8.4 9.3 496 16.0

16.0 16.0

15.5

8.3 9.0 514 16.0

16.0

16.0

15.5

8.4 9.2 531 16.0

16.0 16.0

15.5

TOXICITY TEST PARAMETERS

Sample: 03900628

	00:96	7.6 9.2 275 14.5	7.2 8.6 268 14.5	8.2 8.2 541 14.5	8.2 8.1 539 14.5
	00:00 24:00 48:00 72:00 96:00	14.5	14.5	14.5	14.5
M H	48:00	15.0	15.0	15.0	15.0 15.0
L 0	24:00	15.5	15.5	15.5	15.0
ELAPSED TIME	00:00	7.1 9.4 267 15.5	7.1 9.4 267 15.5	7.8 9.4 542 15.5	7.8 9.4 542 15.5
E		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Tenp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST	S X	100	100	Control	Control

										1			
Sample: 03900426					the acute lethality fish. OME, 1983).			TOTAL MORTALITY	**	000000			
TOXICITY TEST REPORT			Iron and Steel Boiler House, (800)		STATIC (Protocol to determine of liquid effluents to	Rainbow trout		ED TIME	48:00 72:00 96:00	000000	Non-lethal	% 0.0 - 0.0	Non lethal
	TEST CONDITIONS	Company :	Industry :	Laboratory Sampling Method Sampled By Date Collected Received	Type of Bioassay :	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	TEST ELAPS (CONC.	% 00:00 54:00	100 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	96 Hour LC50 :	95% fid. limits :	Comments

Sample Number: 03900426

TOXICITY TEST PARAMETERS

	00:96	7.7 8.9 117 16.0	8.1 8.9 271 16.0	8.2 9.0 381 16.0	8.4 9.0 458 16.0	8.4 9.1 497 16.0	8.3 9.2 517 16.0	8.3 9.4 541 16.0
	72:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
I M E	8:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0
-	7 00:57	15.0	15.0	15.0	15.0	15.0	15.0	15.0
LAPSEL	00:00 24:00 48:00 72:00 96:00	7.9 9.6 109 15.0	7.9 9.3 266 15.0	7.9 8.9 374 15.0	7.9 8.6 452 15.0	7.9 8.3 496 15.0	7.9 8.4 516 15.0	7.9 8.5 538 15.0
E		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST		100	99	70	20	10	5	Control

TOXICITY TEST PARAMETERS

Sample: 03900539

TOXICITY TEST REPORT

Sample Number: 03000530	TEST ELAPSED TIME	% 00:00 24:00 48:00 72:00 96:00	8.0	Cond. 16.0 16.0 16.0 15.5 15.5	65 pH 8.0 8.1 02 ppm 10.2 Cond. 272 279 Temp(C) 16.0 16.0 15.5 15.5	07	8.0 10.1 471	c) 16.0 16.0 16.0 15.5	8.0 10.0 511	(2) 16.0 16.0 16.0 15.5 1	5 pH 8.0 8.3 8.3 8.3 8.3 8.3 8.3 8.3 8.3 8.3 9.6 0 5.4 6.0 16.0 16.0 15.5 15.5	Control pH 8.0 8.4 02 ppm 10.7 9.7 0 Cond. 555 556 1 Temp(C) 16.0 16.0 15.5 15.5		
CONDITIONS	Company : Algoma Steel Sault Ste. Marie, ONI	Region : Northeast Industry : Iron and Steel	Control point : Boiler House, (800)			assay :	Test Animal : Rainbow trout Weight(gm) : Length(mm) :	MORTALITY DATA	ELAPSED TIME HORT	00:00 24:00 48:00 72:00 96:00		000	: Non-lethal	95% fid. limits : 0.0 - 0.0 % Comments : Non lethal

LESI COMDITIONS				
Сопрапу	: Algoma Steel Sault Ste. M (40006)	Algoma Steel Sault Ste. Marie, ONT (40006)		Sam
Region Industry	: Northeast : Iron and Steel	teel		ō
Control point	: #2 Steel M	#2 Steel Making CW, (1000)		1
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab B. Murray : 02/26/90 : 02/28/90	at: 1300		
Type of Bioassay	: STATIC (Protocol of Liquid	STATIC (Protocol to determine the acute of liquid effluents to fish. OME	the acute lethality fish. OME, 1983).	
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	out		
TEST ELAP	SED TIM	E MOR	TOTAL	
00:00	24:00 48:00 72:00	72:00 96:00	*	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-00000	-000000	200000	Con
96 Hour LC50	: >100%			
95% fid. limits Comments	: 0.0 -	% 0.0		

TOXICITY TEST PARAMETERS

Sample: 03900150

		00:90	8.0 9.4 132 14.0	8.0 9.0 292 14.0	8.3 9.3 386 14.0	8.4 8.8 463 14.0	8.4 9.0 501 14.0	8.5 9.4 521 14.0	8.3 9.1 549 14.0
		72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
	Σ	48:00 7	14.5	14.5	14.5	14.5	14.5	14.5	14.5
		24:00 4	14.5	14.5	14.5	14.5	14.5	14.5	14.5
900150	APSED	00:00	7.9 10.4 122 15.0	7.9 9.7 287 15.0	7.9 9.1 384 15.0	7.9 8.4 468 15.0	7.9 8.4 503 15.0	7.9 8.3 526 15.0	7.9 8.1 544 15.0
Sample Number: 03900150	EL		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	1 pH 02 ppm Cond. Temp(C)
Sample	TEST	KCONC.	100	99	07	20	10	īV	Control

Sample: 01900094 TOXICITY TEST PARAMETERS	Sample Number: 01900094 TEST E L A P S E D T I M E CONC. \$\chi\$ 00:00 00:30 01:00 18:30 42:00 66:00 9	7.3 8.4 95 15.0		30 pH 7.8 02 ppm 9.8 Cond. 225 Temp(C) 15.0	TOTAL . 20 pH 7.8 MORTALITY 02 ppm 9.8 Cond. 245 00 Temp(C) 15.0		
TEST REPORT	Algoma Steel Sault Ste. Marie, ONT (40006) Northeast Iron and Steel) gr	05/28/90 at: 1500 STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Rainbow trout		E D T I M E MC 01:00 18:30 42:00 66:00 96:00	00000	0

8:00 15:

00:96

00:96	7.8 10.0 136 15.5	8.1 9.8 290 15.5	8.3 10.1 387 15.5	8.4 10.1 467 15.5	8.5 10.1 502 15.5	8.5 10.1 524 15.5	8.4 10.0 542 15.5
I M E 48:00 72:00 96:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
I M E	15.5	15.5	15.5	15.5	15.5	15.5	15.5
T 7:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
LAPSED 00:00 2	7.8 9.5 129 16.0	7.9 9.5 281 16.0	7.9 9.6 384 16.0	7.9 9.5 466 16.0	7.9 9.5 503 16.0	7.9 9.5 525 16.0	7.9 9.5 542 16.0
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
CONC.	100	92	07	20	10	S	Control

Algora Steel Sample: U3700154 TOXICITY TEST REPORT Sample: U3700154 Algora Steel Sault Steel Sault Steel Sault Steel Sault Steel Sault Steel Sau	Algoria Steel Sample: U3700154 TOXICITY TEST REPORT Sample: U3700154 TOXICITY TEST REPORT Sample: U3700154 TOXICITY Sault Steel Sault Stee				מונים מונים
Sample Northeast	## Algona Steel ## Sault Ste. Marie, ONI ## Colour	TOXICITY TEST R	EPORT Sample: 03900154	TOXICI	TY TEST
Algona Steel Sample N Sauty Ste. Marie, ONI	Algoma Steel Sample No.	TEST CONDITIONS			
Northeast Northeast	Non-lethal	0.0		Sample	Number
STATIC Cold Mill 20 inch, (1500) 100	STATIC Cold Mill 20 inch, (1500) 100	۰۰۰۰		CONC.	
BAR Graph	BAR Graph	••	nch, (1500)		
STATIC S	10 10 10 10 10 10 10 10	р в		100	pH 02 pp cond. Temp(
STATIC Control to determine the acute lethality Control to determine the acute lethality	STATIC Control of the acute lethality Control of liquid effluents to fish. OME, 1983). STATIC Control of liquid effluents to fish. OME, 1983). STATIC Control Control of liquid effluents to fish. OME, 1983). STATIC Control of liquid effluents to fish. OME, 1983). Control of liquid effluents to fish. OME effluents	: 03/01/90	1030	65	OZ PP Cond.
: Rainbow trout : Rainbow trout : Rainbow trout :	: Rainbow trout : Rainbow trout : :		letermine the acute lethality uents to fish. OME, 1983).	07	Temp(
Integral Integral	F L A P S E D				Cond.
TOTAL HORIALITY TOTAL TOTOL	### F S E D T I M E HORTALITY ### CO:00 24:00 48:00 72:00 96:00 ### CONTROL ### CONTROL ### CONTROL ### CONTROL ### HORTALITY #### HORTALITY ##### HORTALITY ###################################			20	PH 02.
F L A P S E D T I M E TOTAL 10	ELAPSED TIME MORTALITY	ORTALITY DATA			Temp(
## Control 00:00 24:00 48:00 72:00 96:00	00:00 24:00 48:00 72:00 96:00	ELAPSED TIM	TOTAL MORTALITY	10	PH 02
fid. limits: 0.0 - 0.0 %	trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00:00 24:00 48:00			Cond.
Hour LC50 : Non-lethal # fid. limits : 0.0 - 0.0 % mments : Non-lethal	Hour LC50 : Non-lethal # fid. limits : 0.0 - 0.0 % mments : Non-lethal	00000		5	pH 02 pp Cond. Temp(
: Non-lethal its : 0.0 - 0.0 % : Non-lethal	: Non-lethal its : 0.0 - 0.0 % : Non-lethal	trol 0 0 0 0		Contro	02 pp Cond. Temp(
: 0.0 · 0.0 : Non-lethal	: 0.0 - 0.0 : Non-lethal	**			
		. 0.0 :			

TOXICITY TEST PARAMETERS

7.6 8.9 121 14.0	8.1 9.5 280 14.0	8.2 9.4 388 14.0	8.2 9.4 465 14.0	8.3 9.4 523 14.0	8.2 9.4 530 14.0	8.8 8.8 557 14.0
14.0	14.0	14.0	14.0	14.0	14.0	14.0
14.5	14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5	14.5
7.7 10.4 115 15.0	7.9 9.4 278 15.0	7.9 8.9 380 15.0	7.9 8.7 459 15.0	7.9 8.5 514 15.0	7.9 8.5 525 15.0	7.9 8.2 543 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	L pH 02 ppm Cond. Temp(C)
100	92	07	20	10	ľ	Control

	TOXICITY TEST REPORT Sample: 01900093	TOXICITY TEST PARAMETERS
TEST CONDITIONS		
Сотрапу	: Algoma Steel	Sample Number: 01900095 TEST E L A P S E
Region Industry	(4000) : Northeast : Iron and Steel	, x
Control point	: Cold Mill 20 inch, (1500)	
Laboratory Sampling Method Sampled By	: MOE : Grab : L. McCormack	02 ppm 9. Cond. 85 Temp(C) 15.
Date Collected Received Tested	: 05/28/90 : 05/28/90 at: 1500	65 pH 02 ppm 02 ppm Cond.
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	1 emp(C) 40 pH 02 ppm
Test Animal Weight(gm) Length(mm)	: Rainbow trout	Tenp(C)
MORTALITY DATA		Oct pom Cond. Temp(C)
TEST E L A P S	SED TIME TOTAL MORTALITY	20 pH 02 ppm
% 00:00 00:30	30 01:00 18:30 42:00 66:00 96:00 %	Cond. Temp(C)
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		10 pH 02 ppm Cond. Temp(C)
trol 0		Control pH 02 ppm Cond. Temp(C)
96 Hour LC50	: Non-lethal	
95% fid. limits	% 0.0 - 0.0 :	
Comments	: MISA Audit; Non-lethal	

EST PARAMETERS

00:96	7.5 9.8 90 90 15.0	7.7 9.1 155 15.0	7.7 9.9 200 15.0	7.8 9.9 220 15.0	7.8 9.9 235 15.0	7.8 10.0 255 15.0	7.8 9.9 270 15.0
42:00 66:00 96:00	7.5 9.8 90 15.0	7.7 9.9 155 15.0	7.8 9.9 195 15.0	7.8 9.9 215 15.0	7.8 9.9 235 15.0	7.8 9.8 250 15.0	7.8 9.8 270 15.0
75:00	7.5 9.9 85 15.0	7.8 9.9 155 15.0	7.9 10.0 200 15.0	7.9 9.9 215 15.0	8.0 9.9 235 15.0	8.0 10.0 250 15.0	8.0 9.9 265 15.0
18:30	7.7 9.8 90 15.0	7.9 9.8 155 15.0	7.9 9.8 200 15.0	7.8 9.5 215 15.0	7.9 9.6 235 15.0	7.7 8.6 250 15.0	8.0 9.8 265 15.0
1 M E 01:00							
D T	7.8 9.8 105 15.0	7.8 9.7 170 15.0	7.8 9.7 215 15.0	7.8 9.8 230 15.0	7.9 9.8 245 15.0	7.8 9.8 260 15.0	7.8 9.7 260 15.0
APSE 00:00	7.5 9.6 85 15.0						
. H	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	02 ppm Cond. Temp(C)				
TEST CONC.	100	59	07	30	20	10	Control

8.2 9.9 380 16.0

8.1 9.9 273 16.0

7.7 9.4 113 16.0

8.3 9.9 455 16.0

8.4 9.8 502 16.0

%

8.4 9.9 519 16.0

8.4 9.6 533 16.0

TEST CONDITIONS				
Company	: Algoma Steel Sault Ste. Marie, ONI	Sample	Sample Number: 03900155	30155
Region Industry	(40006) : Northeast : Iron and Steel	TEST CONC.	EL	E L A P S E 00:00
Control point	: Coke Oven Condenser, (1600)			
Laboratory Sampling Method Sampled By Date Collected Received		100	pH O2 ppm Cond. Temp(C)	7.9 10.2 123 15.0
Tested	: 03/01/90 at: 1600	65	pH 02 ppm	9.0
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	70	Cond. Temp(C)	15.0
Test Animal Weight(gm)	: Rainbow trout		Cond. Temp(C)	384
ATA		20	pH 02 ppm Cond.	7.9
TEST ELAPS CONC.	E D T I M E TOTAL MORTALITY	10	Temp(C) pH	7.9
% 00:00 24:00	24:00 48:00 72:00 96:00		Cond.	503
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		5	pH 02 ppm Cond. Temp(C)	8.0 8.6 522 522 15.0
ontrol 0	0	Control		7.9
96 Hour LC50 95% fid. limits	: Non-lethal : 0.0 - 0.0 %		Temp(C)	15.0
Comments	: Non-lethal			

00:96	7.8 9.4 132 14.0	8.1 9.4 292 14.0	8.1 9.1 394 14.0	8.1 9.2 477 14.0	8.3 9.4 510 14.0	8.3 9.4 535 14.0	8.4 9.5 552 14.0
72:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
1 M E	14.5	14.5	14.5	14.5	14.5	14.5	14.5
D T 24:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
LAPSED TIME 00:00 24:00 48:00 72:00 96:00	7.9 10.2 123 15.0	8.0 9.8 279 15.0	8.0 9.5 384 15.0	7.9 9.1 464 15.0	7.9 8.6 503 15.0	8.0 8.6 522 15.0	7.9 8.4 543 15.0
Ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	59	07	20	10	10	Control

TEST CONDITIONS			
Сотрапу	: Algoma Steel		Sample Ni
Region Industry	(40006) : Northeast : Iron and Steel		CONC.
Control point	: Coke Oven Condenser, (1600)		
Laboratory Sampling Method Sampled By Date Collected Received Tested	: MOE : Grab : L. McCormack : 05/23/90 : 05/25/90 at: 1200		65
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	ute lethality OME, 1983).	07
Test Animal Weight(gm) Length(mm)	: Rainbow trout :		30
MORTALITY DATA			
CONC.	SED TIME TOTAL MORTALITY	. A	20
% 00:00 01:00	00 02:00 24:00 48:00 69:00 96:00	*	
100 0 0 65 0 0 40 0 0 30 0 0		0000	10
o point	000	000	Control
96 Hour LC50	: Non-lethal		
95% fid. limits	% 0.0 - 0.0 :		
Comments	: MISA Audit; Non-lethal		

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY LEST PARAMETERS

TOXICITY TEST PARAMETERS

Sample: 03900542

TOXICITY TEST REPORT

Company : Al Sa (4 Region : No Industry : Ir			a CHEX	MANAGE STATE OF STREET	740		
	Algoma Steel Sault Ste. Marie, ONT (20006)		TEST CONC.	TEST E L A P S CONC.	APSED	 	₩ ₩
	Northeast Iron and Steel		34		00:00 24:00 48:00	00:5	48:00
Control point : Co	Coke Oven Condenser, (1600)	(0)	100	Hd	8.0		
	BAR Grab B. Murray			02 ppm Cond. Temp(C)	9.2 116 16.0	15.5	15.5
** ** **	06/25/90 06/27/90 06/29/90 at: 1150		99	pH O2 ppm Cond.	8.0 9.0 276	15 5	5 5
Type of Bioassay : SI (P	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	ne acute lethality ish. OME, 1983).	07	pH° 02 ppm	7.9		
Test Animal : Ra Weight(am) :	Rainbow trout			Temp(C)	16.0	15.5	15.5
Length(mm)			20	pH 02 ppm cond.	7.9 8.9 458	5.5	5.5
MORIALIT DAIA				Coldinal	2	1	,
TEST ELAPSED CONC.	D TIME	TOTAL MORTALITY	10	pH 02 ppm Cond	8.9		
x 00:00 24:00 48:	48:00 72:00 96:00	34		Temp(C)	16.0	15.5	15.5
100 65 40 20 20 20 00 00 00 00 00 00 00 00 00 00	0000	0000	v.	pH O2 ppm Cond. Temp(C)	7.9 9.0 522 16.0	15.5	15.5
o 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000	000	Control	1 pH 02 ppm Cond. Temp(C)	7.9 9.0 540 16.0	15.5	15.5
96 Hour LC50 : h	Non-lethal						
95% fid. limits :	2 0.0 - 0.0						
Comments : No	Non lethal						

8.4 9.9 455 15.5

15.5

15.5

15.5

15.5

8.2 10.0 283 15.5

15.5

15.5

72:00 96:00

8.3 10.1 387 15.5

15.5

TOXICITY TEST PARAMETERS

Sample: 03890314

TOXICITY TEST REPORT

	e Number: 03890314	TEST		100 pH 7.8 02 ppm 10.4 cond. 151 Temp(C) 15.0 14.5 14.5	65 pH 7.8 02 ppm 9.8 cond. 312	()	Cond. 404 Temp(C) 15.0 15.0 14.5 14.5	20 pH 7.8	Cond. 495 Temp(C) 15.0 15.0 14.5 14.5		Cond. 530 Temp(C) 15.0 15.0 14.5 14.5	7.8 9.2 570 15.0			
TEST CONDITIONS	Company : Algoma Steel Sault Ste. Marie, ONI	Region : Northeast Industry : Iron and Steel	Control point : #2 Tube Mill, (1800)	۰۰۰۰۰۰	Received : 11/29/89 Tested : 11/30/89 at: 1330	Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	Test Animal : Rainbow trout Weight(gm) :		MORTALITY DATA	TEST ELAPSED TIME TOTAL CONC. MORTALITY	% 00:00 24:00 48:00 72:00 96:00 %	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	96 Hour LC50 : >100%	95% fid. limits : 0.0 - 0.0 %	Comments : LC50 >100%

8.2 8.9 500 14.0

7.6 8.8 165 14.0

00:96 00:

7.9 8.7 321 14.0

8.1 8.9 418 14.0

8.4 9.2 531 14.0

7.7 9.4 558 14.0

CONDITIONS		
A	Algoma Steel Sault Ste. Marie, ONI	
	Northeast Iron and Steel	
Control point : #	#2 Tube Mill, (1800)	
Laboratory Sampling Method : G Sampled By : R Date Collected : 15 Received : 15 Tested : 15	BAR Grab R. King 12/13/89 12/15/89 12/18/89 at: 815	
Type of Bioassay : STA (P) of	VIIC retocol to determine liquid effluents to	the acute lethality fish. OME, 1983).
Test Animal : Re Weight(gm) : Length(mm) :	Rainbow trout	
DATA		
ELAPSE	DIIME	TOTAL MORTALITY
00:00 24:00 48	48:00 72:00 96:00	34
000000	000000	000000
96 Hour LC50 : 1	Non-lethal	
limits :	% 0.0 - 0.0	
. N	Non tethal	

TOXICITY TEST PARAMETERS

	00:9	8.2 10.7 186 14.0	8.3 10.4 322 14.0	8.3 10.4 418 14.0	8.5 10.5 484 14.0	8.5 10.5 515 14.0	8.4 10.4 520 14.0	8.4 10.3 563 14.0
000.00	, nn:2	14.0	14.0	14.0	14.0	14.0	14.0	14.0
48:00 72:00 96:00		14.0	14.0	14.0	14.0	14.0	14.0	14.0
24:00 4		14.0	14.0	14.0	14.0	14.0	14.0	14.0
00:00		7.9 10.3 188 15.0	7.8 9.8 323 15.0	7.8 9.2 418 15.0	7.7 8.7 490 15.0	7.8 8.4 515 15.0	7.8 8.4 537 15.0	7.8 8.4 560 15.0
		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	02 ppm Cond. Temp(C)
, , ,	2	100	99	07	20	10	2	Control

TOXICITY TEST PARAMETERS

Sample: 03900072

TOXICITY TEST REPORT

	Sample Number: 03900072	TEST ELAPSED TIME	00:00 24:00 48:00 72:00 9		100 pH 7.8 02 ppm 10.2 cond. 166 Temp(C) 15.0 14.5 14.5 14.5	65 pH 7.9 02 ppm 9.8 Cond. 304 Temp(C) 15.0 14.5 14.5 14.5	40 pH 7.9 02 ppm 9.3 -	()	20 pH 7.9	Cond. 408 Temp(C) 15.0 14.5 14.5 14.5	10 pH 7.9 02 ppm 9.1	()	5 pH 7.9 02 ppm 9.0 cond. 520 Temp(C) 15.0 14.5 14.5	Control pH 7.9 02 ppm 8.6 Cond. 540 Temp(C) 15.0 14.5 14.5 14.5				
	• Alacan Ctool	Angome Steet Soult Ste. Marie, ONT	: Northeast : Iron and Steel	: #2 Tube Mill, (1800)	. BAR . Grab . B. Muray	01/25	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	: Rainbow trout			SED TIME TOTAL MORTALITY) 48:00 72:00 96:00 x		0 0 0	: Non-lethal	% 0.0 - 0.0 :	: Non-lethal	
TEST CONDITIONS	Macamo	Company	Region Industry	Control point	Laboratory Sampling Method Sampled By	Received Tested	Type of Bloassay	Test Animal	Length(mm)	MORTALITY DATA	TEST ELAP S CONC.	% 00:00 24:00 48:00	160 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ontrol 0	96 Hour LC50	95% fid. limits	Comments	

8.3 9.7 14.5

8.3 9.7 507 14.5

8.4 9.9 526 14.5

8.5 10.1 537 14.5

7.8 9.7 169 14.5

00:96 00:

8.1 9.7 310 14.5

8.3 10.0 405 14.5

TEST CONDITIONS	
сопрапу :	-
Region :	(40006) Northeast Iron and Steel
Control point :	#2 Tube Mill, (1800)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab B. Murray 02/26/90 02/28/90 03/01/90 at: 1000
Type of Bioassay :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	Rainbow trout
MORTALITY DATA	
TEST ELAPS CONC.	E D T I M E TOTAL MORTALITY
% 00:00 54:00	48:00 72:00 96:00 %
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
96 Hour LC50 :	: Non-lethal
95% fid. limits :	% 0.0 - 0.0 :
Comments	: Single Concentration TestNon-lethal

TOXICITY TEST PARAMETERS

Sample: 03900147

TOXICITY TEST REPORT

		00:00 24:00 48:00 72:00 96:00
	3 W 1	48:00
	1 Q	24:00
Number: 03900147	ELAPSE	00:00
Sample Nur	TEST	CONC.

8.0 9.3 125 14.0	7.7 9.0 9.0 119 14.0	8.1 8.1 550 14.0	8.3 8.5 540 14.0
14.0	14.0	14.0	14.0
14.5 14.5 14.0	14.5 14.5 14.0	14.5 14.5 14.0	14.5 14.5 14.0
14.5	14.5	14.5	14.5
7.9 10.1 114 14.5	7.9 10.1 114 14.5	7.9 8.3 543 14.5	7.9 8.3 543 14.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
100	100	Control	Control

TEST CONDITIONS			
Company	: Algoma Steel Sault Ste. Marie,	eel , Marie, ONI	
Region Industry	: Northeast : Iron and Steel	steel	
Control point	: #2 Tube M	#2 Tube Mill, (1800)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab B. Murray 03/26/90 03/28/90	at: 930	
Type of Bioassay	: STATIC (Protocol of Liquid	ATIC rotocol to determine t liquid effluents to f	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout	out	
MORTALITY DATA			
CONC.	SED TI	ж ш	TOTAL MORTALITY
% 00:00 24:00	00 48:00 72:00	00:96	3 -8
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000	0000
96 Hour LC50	: Non-lethal	E	
95% fid. limits	. 0.0 :	% 0.0	
Comments	: Single Co	Single Concentration Test; non-lethal	st; non-lethal

Sample Number: 03900249

TOXICITY TEST PARAMETERS

Sample: 03900249

TOXICITY TEST REPORT

00:96	7.7 8.8 153 14.5	7.6 8.7 155 14.5	8.3 8.5 525 14.5	8.3 9.6 526 14.5
72:00	14.5	15.0 14.5	14.5	14.5
T 1 M E	15.0 14.5	15.0	15.0	14.5 15.0 14.5
T 0	14.5	14.5	14.5	14.5
LAPSED TIME 00:00 24:00 48:00 72:00 96:00	7.6 11.0 148 15.0	7.6 11.0 148 15.0	7.9 9.9 530 15.0	7.9 9.9 530 15.0
п п	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

Sample: 03900331

TOXICITY TEST REPORT

TEST CONDITIONS					
Company	« »	Algoma Steel Sault Ste. Marie,	arie, ONI		
Region Industry		Northeast Iron and Steel	el		
Control point	**	#2 Tube Mill, (1800)	, (1800)		
Laboratory Sampling Method Sampled By Date Collected Received	808000	BAR Grab B. Murray 04/23/90 04/25/90 at:	: 1510		
Type of Bioassay	S - 0	STATIC (Protocol to of liquid ef	to determine the effluents to fish	the acute lethality fish. OME, 1983).	
Test Animal Weight(gm) Length(mm)		Rainbow trout	ı		
MORIALITY DATA					
TEST ELAP S	S	D TIME		TOTAL MORTALITY	
% 00:00 54:00	0 48	00:00 24:00 48:00 72:00 96:00	00:9	**	
100 0 0 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0000	0000	0000	ı
96 Hour LC50	**	Non-lethal			1

SLOPE of Mortality Curve : LC50 Calculated By :

Sample Number: 03900331

TOXICITY TEST PARAMETERS

00:96	7.3 7.6 131 15.5	7.4 7.6 133 15.5	8.1 8.5 539 15.5	8.8 535 15.5
72:00	15.5	15.5	15.5	15.5
T I M E	15.5	15.5	15.5	15.5
0:5	15.5	15.5	15.5	15.5
E L A P S E D 00:00 2	8.0 9.7 131 15.0	8.0 9.7 131 15.0	7.9 8.9 550 15.0	7.9 8.9 550 15.0
Э	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

: Non lethal; single concentration test

0.0

0.0 :

95% fid. limits

Comments

TOXICITY TEST REPORT

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

96:00	7.8 8.9 178 14.0	7.8 9.3 169 14.0	8.5 9.2 536 14.0	8.5 9.2 542 14.0
72:00	14.0	14.0	14.0	14.0
T I M E	16.0 15.0 14.0	16.0 15.0 14.0	16.0 15.0	16.0 15.0 14.0
D T	16.0	16.0	16.0	16.0
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	7.7 9.8 165 15.0	7.7 9.8 165 15.0	7.9 8.9 546 15.0	7.9 8.9 546 15.0
Ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	• 100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900427

TOXICITY TEST REPORT

	00:96
	72:00
I M E	48:00
I 0	24:00
APSE	00:00
E	
TEST	CONC.

7.8 8.7 215 16.0	7.8 8.6 211 16.0	8.4 9.0 530 16.0	8.4 9.2 531 16.0
15.5	15.5	15.5	15.5
15.0 15.0	15.0 15.0 15.5	15.0 15.0 15.5	15.0 15.0 15.5
15.0	15.0	15.0	15.0
7.9 9.3 214 15.0	7.9 9.3 214 15.0	7.9 8.6 535 15.0	7.9 8.6 535 15.0
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
100	100	ontrol	ontrol

TOXICITY TEST PARAMETERS

Sample: 01900100

TOXICITY TEST REPORT

	0100 PSED TIME	00:50	7.5 7.4 7.6 7.6 7.6 7.7 7.7 7.8 8.7 9.1 9.5 9.6 9.5 9.5 9.5 135 135 140 140 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.	7.7 7.8 7.8 7.8 7.8 7.8 7.8 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5	2.7 7.7 7.7 7.7 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6	7.7 7.7 7.8 9.5 9.7 9.8 205 220 230 15.0 15.0 15.0 15.0	7.8 9.8 240 15.0	7.7 7.8 7.7 7.7 7.8 9.5 9.4 9.7 9.8 9.3 245 235 230 250 250 15.0 15.0 15.0 15.0 15.0	7.8 7.7 7.8 7.8 7.8 7.8 9.1 9.5 9.1 9.1 2.60 2.55 2.55 2.60 2.65 15.0 15.0 15.0 15.0		
	Sample Number: 01900100 TEST E L A P S CONC.		100 pH 02 ppm Cond. Temp(C)	65 pH 02 ppm Cond. Temp(C)	40 pH 02 ppm Cond.	30 pH O2 ppm Cond. Temp(C)	20 pH 02 ppm Cond. Temp(C)	10 pH 02 ppm Cond, Temp(C)	Control pH 02 ppm Cond, Temp(C)		
					the acute lethality fish. OME, 1983).		TOTAL MORTALITY %	00000	000		
	: Algoma Steel Sault Ste. Marie, ONT (40006)		: #2 Tube Mill, (1800) : MOE : Grab : L. McCormack	: 05/28/90 : 05/31/90 : 06/01/90 at: 1000	: STATIC (Protocol to determine the of liquid effluents to fish : Rainbow trout		ELAPSED TIME MO00:00 02:00 04:00 25:00 49:00 71:00 96:00			: Non-lethal : 0.0 - 0.0 %	: MISA Audit; Non-lethal
SHOPE TO TO TO THE	Company	Industry	Control point Laboratory Sampling Method Sampled By	Date Collected Received Tested	Type of Bioassay Test Animal	Weight(gm) Length(mm) MORTALITY DATA	TEST ELAF CONC. % 00:00 02:	100 65 40 30 30 00 00 00 00 00 00 00 00 00 00 00	otrol 0	96 Hour LC50 95% fid. limits	Comments

Sample:	
REPORT	
TEST	
TOXICITY	

03900543

TEST CONDITIONS	
Сопрапу	: Algoma Steel Sault Ste. Marie ONI
Region Industry	(40006) : Northeast : Iron and Steel
Control point	: #2 Tube Mill, (1800)
Laboratory Sampling Method	: BAR : Grab
Sampled By Date Collected Received	: B. Murray : 06/25/90 : 06/27/90
Tested	: 06/27/90 at: 1030

Type of Bioassay : SIATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).

Test Animal : Rainbow trout Height(gm) : Length(mm) :

MORTALITY DATA

	%	0000
TOTAL MORTALITY		
M E	00:00 24:00 48:00 72:00 96:00	0000
T I M E	72:0	0000
E D	48:00	0000
ELAPSED	24:00	0000
EL	00:00	0000
TEST CONC.	%	100 100 Control

96 Hour LC50 : Non-lethal
95% fid, limits : 0.0 - 0.0 %
Comments : Single concentration test; Non lethal

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900543

7.5 8.0 178 15.5	7.5 7.9 174 15.5	8.2 8.3 541 15.5	8.3 8.7 545 15.5
15.5	15.5	15.5	15.5
16.0	16.0	16.0	16.0
15.5	15.5	15.5	15.5
7.9 9.5 166 15.5	7.9 9.5 166 15.5	7.9 9.2 540 15.5	7.9 9.2 540 15.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
100	100	Control	Control
	pH 7.9 02 ppm 9.5 cond. 166 Temp(C) 15.5 16.0 15.5	pH 7.9 02 ppm 9.5 Cond. 166 Temp(C) 15.5 15.5 16.0 15.5 pH 7.9 02 ppm 9.5 Cond. 166 Temp(C) 15.5 16.0 15.5	pH 7.9 02 ppm 9.5 16.6 15.5 16.0 15.5 ppm 9.5 15.5 16.0 15.5 ppm 9.5 cond. 166 15.5 16.0 15.5 rol pH 7.9 02 ppm 9.5 cond. 15.5 15.5 16.0 15.5 cond. 540 15.5 15.5 16.0 15.5 remp(C) 15.5 15.5 16.0 15.5

TOXICITY TEST PARAMETERS

00:96	7.6 8.0 221 14.5	7.6 8.2 218 14.5	8.3 9.2 535 14.5	8.3 9.1 537 14.5
72:00	14.5	14.5	14.5	14.5
T I M E	15.0	15.0	15.0	15.0 15.0 14.5
D T	15.0	15.0	15.0	15.0
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.0 9.6 210 15.51	8.0 9.6 210 15.5	7.8 9.4 539 15.5	7.8 9.4 539 15.5
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

combillions any on stry rol point ratory ling Method led By collected Received lested of Bioassay of Bioassay animal t(gm) th(mm) th(mm) th(mm)	Algoma Steel Sault Ste. Marie, ONI (40006) Northeast Iron and Steel 1 Iron and Steel 1 Iron and Steel 24 inch Coke Quench, (2000) MOE 1 In McCormack 105/28/90	Sample Sample 100 100 100 20 20	Sample Number: 01900096 TEST E L A P S I CONC. 00:00 CONG. 02 ppm 8.:08 Cond. 15:08 40 pH B Cond. 15:08 Cond. 16:09 20 ppm Cond. 15:09 20 pH Cond. 16:09 20 pH Cond. 16:09	PARAMETERS 01900096 E. L. A. P. S. E. D 00:00 00 00:00 01 15.0 15.0		T I M E 0:30 01:00 19:00 4 8.3 8.8 8.8 8.2 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0
65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 3 5 5 5 50 0 0 0 0 1 1 10 0 0 0 0 0 0 0 0 0 0 0 1 10 0 0 0 0 0 0 0 10 0 0 0 0 0 0 10 0 0 0 0 0 0 10 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0	10 Control	pH 02 ppm Cond. Temp(C) pH D2 ppm Cond. Temp(C)		7.9 9.8 9.8 15.0 7.8 7.8 255 15.0	8.0 10.0 15.0 15.0 8.0 9.9 15.0

7.5 285 7.7 7.7 280 280 15.0 15.0 15.0

7.6 9.2 280 15.0

7.8 9.6 280 15.0

7.5 7.5 285 15.0

7.8 9.9 270 15.0

7.9 10.0 270 15.0

00 42:00 66:00 96:00

7.8 10.0 270 15.0

7.8 9.9 270 15.0

8.0 10.1 265 15.0

7.8 10.0 275 15.0

7.8 9.9 270 15.0

7.9 10.0 270 15.0

7.8 10.0 270 15.0

7.9 9.9 270 15.0

8.0 10.0 265 15.0

7.8 9.9 270 15.0

7.9 9.8 265 15.0

7.9 9.9 265 15.0

89

COMPANY: Algoma Steel, Sault Ste. Marie

(40006)

SECTOR: Iron and Steel

REGION: Northeast

SUMMARY

Data for fifty Daphnia magna acute lethality toxicity tests conducted on samples of effluent collected between November 1989 and April 1990 were submitted by Algoma Steel Corp. of Sault Ste. Marie. This company was not in operation during part of July and all of August due to a steel workers strike, therefore no samples were submitted for these months.

Samples from coke oven condenser (1600), cold mill 20 inch sewer (1500), 30 inch sewer (300), the 60 inch sewer (200), and #2 steel making cooling water (1000) and cold mill 24 inch sewer (500) were not acutely lethal to Daphnia, or had 48 h LC50 values > 100%. The audit sample collected in May from the coke oven condenser was acutely lethal to Daphnia (LC50 = 25.5%).

Eight of nine samples collected from the tube mill (400) were all not acutely lethal to Daphnia, as was the Ministry audit. One sample had an LC50 >100%

Six of nine samples of # 2 tube mill (1800) effluent were nonlethal, and two samples had a single mortality during the test. The sample collected in March was toxic to Daphnia with a 48 h LC50 = 27.8%. The Ministry audit sample had an LC50 > 100%.

Seven of nine samples from the terminal settling basin (700) were nonlethal. Two remaining samples had LC50s > 100% as did the Ministry audit.

Six of nine samples from the bar and strip lagoon (100) were acutely lethal to Daphnia, with 48 h LC50s between 16.2 and 90.6 % effluent. One sample was non-lethal and the remaining had LC50s >100%. The Ministry audit conducted in May had an LC50 = 57.4%. to 21.4%.

Bar & Strip Lagoon

03890311 sampled: 11/28/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal.

03890362 sampled: 12/13/89 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03900073 sampled: 01/22/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900156 sampled: 02/26/90 LC50: 21.4 % 95% fid. limits: 16.2 - 28.0 %

comments:

03900246 sampled: 03/26/90 LC50: 24.8 % 95% fid. limits: 35.8 - 17.1 % slope: 2.9 comments:

03900328 sampled: 04/23/90 LC50: 79.1 % 95% fid. limits: 42.8 - 146.0 % slope: 1.4 comments:

02900099 sampled: 05/28/90 LC50: 57.4 % 95% fid. limits: 44.2 - 73.4 % slope: 5.2 comments: MISA Audit

03900423 sampled: 05/28/90 LC50: 55.1 % 95% fid. limits: 41.9 - 72.3 % slope: 4.2 comments:

03900533 sampled: 06/26/90 LC50: 50.0 - 100.0 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 Range 50 - 100

03900626 sampled: 07/23/90 LC50: 16.2 % 95% fid. limits: 12.1 - 21.6 % slope: 5.4 comments:

60 inch Sewer

03900152 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Non-lethal

02900089 sampled: 05/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900534 sampled: 06/25/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 >100

30 inch Sewer

03900151 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Non-lethal

03900535 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Non lethal

Tube Mill

03890312 sampled: 11/27/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03890364 sampled: 12/13/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900070 sampled: 01/22/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900149 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900247 sampled: 03/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900329 sampled: 04/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

02900092 sampled: 05/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit; non-lethal

03900424 sampled: 05/28/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900536 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900627 sampled: 07/23/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

Cold Mill 24 inch

03900148 sampled: 02/26/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

02900097 sampled: 05/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900537 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

Cold Mill Storm Sewer

Terminal Settling Basin

03890313 sampled: 11/27/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03890365 sampled: 12/13/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03900071 sampled: 01/22/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900153 sampled: 02/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900248 sampled: 03/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900330 sampled: 04/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

02900098 sampled: 05/28/90 LC50 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: MISA Audit

03900425 sampled: 05/28/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: Non-lethal

03900538 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900628 sampled: 07/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

Boiler House

03900426 sampled: 05/28/90 LC50: 11.4 % 95% fid. limits: 9.0 - 14.4 % slope: 5.6 comments:

03900539 sampled: 06/25/90 LC50 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100

Intake Water

#2 Steel Making CW

03900150 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

02900094 sampled: 05/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit; Non-lethal

03900540 sampled: 06/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

#1 Thickener

#2 Thickener

By-products Area

Cold Mill 20 inch

03900154 sampled: 02/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

02900093 sampled: 05/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit; Non-lethal

03900541 sampled: 06/25/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

Coke Oven Condenser

03900155 sampled: 02/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

02900090 sampled: 05/23/90 LC50: 25.5 %

95% fid. limits: 18.3 - 34.4 % slope: 4.2

comments: MISA Audit

03900542 sampled: 06/25/90 LC50: 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100

Rain Gauge

#2 Tube Mill

03890314 sampled: 11/27/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100% effluent concentration

03890363 sampled: 12/13/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900072 sampled: 01/22/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900147 sampled: 02/26/90 LC50: 27.8 % 95% fid. limits: 22.3 - 34.7 % slope: 5.9

comments:

03900249 sampled: 03/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900331 sampled: 04/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900368 sampled: 05/07/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900427 sampled: 05/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

95% fid. limits:

comments: Non-lethal

02900100 sampled: 05/28/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900543 sampled: 06/25/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900625 sampled: 07/23/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

#1 Thickener EO

24 inch Coke Quench

02900096 sampled: 05/23/90 LC50: 0.0 - 5.0 % 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

TEST CONDITIONS		
Company : Algoma Steel Sault Ste. Marie, ONT (40006) (40006) : Northeast	Sample N TEST CONC.	Sample Number: 03890311 TEST E L A P S E
ooint ::	2	
BAR Grab B. Hur d 11/29/ 11/30/	100	DH 7.7 Cond, 337 Temp(C) 19.0 DH 8.1 02 ppm 9.4
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	Cond. 321 Temp(C) 19.0
<pre>Test Animal : D. magna Weight(gm) : Length(mm) :</pre>	13	
MORTALITY DATA		02 ppm 9.0 Cond. 309
TEST ELAPSED TIME TOTAL CONC.	9	PH 8.4
% 00:00 24:00 48:00	%	02 ppm 9.0 cond. 307
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	Temp(C) 19.0 pH 8.4 02 ppm 9.1 cond. 306 Temp(C) 19.0
48 Hour LC50 : Non-lethal		
95% fid. limits : 0.0 - 0.0 %		
Comments : Non-lethal.		

EST PARAMETERS

W.	48:00	7.9	9.1 345 19.5	8.2 9.3 330 19.5	8.3 9.4 322 19.5	8.3 9.4 317 19.5	8.3 9.5 308 19.5	8.4 9.5 310 19.5
	54:00		19.5	19.5	19.5	19.5	19.5	19.5
A P S E	00:00	7.7	10.0 337 19.0	8.1 9.4 321 19.0	8.3 9.1 313 19.0	8.3 9.0 309 19.0	8.4 9.0 307 19.0	8.4 9.1 306 19.0
ш		Hd.	02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
TEST	CONC.	100		50	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 03890362

TOXICITY TEST REPORT

00:00 24:00 48:00 ELAPSED Sample Number: 03890362 TEST CONC.

8.1	8.8	8.3	8.4	8.5	8.4
8.4	8.8	8.7	8.9	9.3	9.4
300	298	299	298	298	305
20.0	20.0	20.0	20.0	20.0	20.0
19.0	19.0	19.0	19.0	19.0	19.0
7.8	8.2	8.4	8.5	8.4	8.5
10.6	9.4	9.1	8.9	8.8	8.7
298	297	297	297	296	296
20.0	20.0	20.0	20.0	20.0	20.0
pH	pH	pH	pH	pH	pH
02 ppm	O2 ppm				
Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	25	13	9	Control

TOTALITY TEST REPORT Sample: 03900073 TOTALITY Sault Size. Marie, ONT		LC50 Calcula	LC50 Calculated By:
Algoria Steel Sample Murber: Sample Murber: Sample Murber: Salit Steel Sal		TOXICITY TES	T PARAMETERS
## Salut Steel Salut Steel		Sample Numbe	Number: 03900073
thod : BAR thursy ted : 01/25/90 at: 1530	Algona Steel Sault Ste. Marie, ONT (40006)	TEST CONC.	ELAPSED 00:00 24
thod : Bar & Strip Lagoon, (100) thod : BAR	Iron and Steel		
thod : BAR ted : 01/22/90 ed : 01/25/90 at: 1530 ed : 01/25/90 at: 1530 assay : STATIC (Daphnia magna Acute Lethality Toxicity : D. magna : D.	60		
assay : 01/25/90 at: 1530 assay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna : D. magna			
assay : STATIC (Opphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : 0. magna : 0. magna E L A P S E D T I M E MORTALITY :00 24:00 48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	at:	Conc	286 (c) 20.0
### ### ##############################			8.2 8.7 8.7
DATA F L A P S E D T I M E TOTAL 6 E L A P S E D T I M E MORTALITY % 00:00 24:00 48:00 % Control 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 8 8 LC50 : >100% LC50 : >100%			
0 24:00 48:00		Temp	()
24:00 48:00	DIIME		8.2 yem 8.5 d. 302
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Tem	G
			8.5 4. 8.5 99 9(C) 20.0
95% fid. limits : 0.0 - 0.0 %	0.0 - 0.0		
Comments : LC50 > 100	LC50_>100		

8.3 285 20.5

20.02

8.2 8.4 268 20.5

20.02

ELAPSED TIME

00:00 24:00 48:00

8.4 8.4 294 20.5

20.02

8.4 8.3 298 20.5

20.02

8.4 8.4 302 20.5

20.02

20.02

MISA Daphnia		SLOPE LC50 C	SLOPE of Mortality Curve LC50 Calculated By :	Curve :	Trimme	Trimmed Spearman-Karber	rber
	TOXICITY TEST REPORT Sample: 03900156	TOXICI	TOXICITY TEST PARAMETERS	AETERS			
TEST CONDITIONS Company Region Industry	: Algoma Steel Sault Ste. Marie, ONT (40006) : Northeast : Iron and Steel	Sample TEST CONC.	Number: C	3900156 L A P S E 0	156 PSED TIME 00:00 24:00 48:00	1 M E 48:00	
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	: Bar & Strip Lagoon, (100) : BAR : Grab : B. Murray : 02/26/90 : 03/28/90 : 03/01/90 at: 1000	100	pH Cond. Temp(C) PH OH	28.5 20.0 20.0 8.5 8.5	20.0	20.5 20.5 20.5 20.5 20.5	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna	25	Temp(C) PH 02 ppm Cond. Temp(C)	20.0 8.5 8.9 300 20.0	20.0	20.5 8.5 8.4 294 20.5	
Weight(gm) Length(mm) MORTALITY DATA		13	pH 02 ppm cond. Temp(C)	8.5 8.8 303 20.0	20.0	8.4 8.4 299 20.5	
TEST ELAPSED CONC. % 00:00 24:00 48:00	SED TIME TOTAL MORTALITY %	9	pH 02 ppm Cond. Temp(C)	8.8 8.8 302 20.0	20.02	8.4 8.6 302 20.5	
100 0 11 50 0 5 25 0 0 13 0 0 6 0 0 Control 0 0	12 8 66 11 11 8 91 0 0	Control	O2 ppm Cond. Temp(C)	8.5 8.8 300 20.0	20.0	8.4 8.4 303 20.5	
48 Hour LC50 95% fid. limits Comments	: 21.4 % : 16.2 - 28.0 % :						

MISA Daphnia

SLOPE of Mortality Curve : 2.9 LC50 Calculated By : Probit

	TOXICITY TEST REPORT Sample: 03900246	TOXICIT	TOXICITY TEST PARAMETERS	TERS
TEST CONDITIONS				
Company	: Algona Steel Sault Ste. Marie, ONI	Sample	Sample Number: 03900246 TEST E L A P S	246 P S E
Region Industry	(4000) : Northeast : Iron and Steel	CONC.		00:00
Control point	: Bar & Strip Lagoon, (100)	9		
Laboratory Sampling Method Sampled By	: BAR : Grab : B. Murray : A.72,00	100	pH O2 ppm Cond. Temp(C)	9.2 9.2 284 19.5
Received	: 03/28/90 : 03/28/90 at: 1440	20	pH 02 ppm Cond.	8.7 9.0 293
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	Temp(C) pH 02 ppm	8.3
Test Animal Weight(gm) Length(mm)	: D. magna :	13	Cond. Temp(C) pH	19.5
MORTALITY DATA			Cond. Temp(C)	299
TEST E L A P CONC.	SED TIME TOTAL MORTALITY	9	pH 02 ppm	8.8
% 00:00 24:00 48:00	00 48:00		Cond. Temp(C)	19.5
100 0 10 50 0 3 25 0 3 13 0 0 6 0 0 Control 0 0	11 10 8 8 66 0 0 0 0 0	Control	pH 02 ppm Cond. Temp(C)	8.1 8.9 301 19.5
48 Hour LC50	: 24.8 %			

ELAPSED TIME Sample Number: 03900246 pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) Control TEST CONC. 100 50 25 13 9

8.4 8.9 297 20.0

9.2 9.2 284 19.5

19.5

00:00 24:00 48:00

8.3 8.8 303 20.0

8.7 9.0 293 19.5

19.5

8.8 304 20.0

8.3 8.9 297 19.5

19.5

8.8 306 20.0

8.2 8.8 299 19.5

19.5

8.8 311 20.0

8.8 296 19.5

19.5

8.1 8.7 305 20.0

8.9 301 301 19.5

19.5

26

17.1 1

35.8 ..

95% fid. limits

Comments

MISA Daphnia		SLOPE C	SLOPE of Mortality Curve LC50 Calculated By :	Curve :	1.4 Probit	
TOXICITY TEST REPORT	ORI Sample: 03900328	TOXICII	TOXICITY TEST PARAMETERS	METERS		
NDITIONS		Sample	Sample Number: 03900328	00328		
Company : Algona sizer Sault Ste. Marie, ONI (40006)	s, ONT	TEST	EL	APSE	1 0	H
Region : Northeast Industry : Iron and Steel		2		00:00 24:00 48:0	24:00	48:0
Control point : Bar & Strip Lagoon, (100)	oon, (100)					'
Laboratory : BAR Sampling Method : Grab Sampled By : B, Murray Date Collected : 04.737,00		001	pH 02 ppm Cond. Temp(C)	8.9 9.3 252 20.0	20.0	20,20
: 04/25/90 : 04/25/90 at:	1330	20	pH 02 ppm Cond.	9.3	9	80.00
Type of Bioassay : STATIC (Daphnia magna A Test Protocol.	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm	8.1	0.02	80
			Cond. Temp(C)	290	20.0	20.
		13	pH 02 ppm Cond.	9.2		80.0
MORTALITY DATA			Temp(C)	20.0	20.02	20.
TEST ELAPSED TIME CONC.	TOTAL MORTALITY	9	pH 02 ppm	8.0		800
% 00:00 24:00 48:00	ж		Cond. Temp(C)	301	20.0	20.
100 0 5 7 50 0 0 4 25 0 0 3 13 0 0 2 6 Control 0 0 0	58 33 25 16 0	Control	pH 02 ppm Cond. Temp(C)	7.9 9.2 300 20.0	20.0	8. 29. 20.
48 Hour LC50 : 79.1 %						
95% fid. limits : 42.8 - 146.0	**					
Comments :						

8.3 252 20.0 20.0 8.3 9.2 274

ELAPSED TIME

00:00 24:00 48:00

8.2 9.2 286 20.0

8.2 9.1 291 20.0

8.2 9.2 294 20.0

Company : Algoma Steel Sault Ste. Marie, ONI (40006) : Northeast Industry : Iron and Steel Control point : Bar & Strip Lagoon, (100)		A Company
y : point :	Sample TEST CONC.	Sample Number: TEST CONC.
	100	pH 02 ppm Cond. Temp(C)
Date Collected : 05/28/70 Received : 05/31/90 Tested : 05/31/90 at: 1400	09	pH 02 ppm Cond. Temp(C)
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	30	DH 02 ppm
		Temp(C)
Length(mm) :	15	02 ppm
MORIALITY DATA		Temp(C)
TEST ELAPSED TIME TOTAL CONC.	3	DH 02 ppm
% 00:00 00:30 01:00 02:00 24:00 48:00 %		Temp(C)
100 0 0 0 3 11 91 60 0 0 0 0 0 6 50 8 30 0 0 0 0 0 1 8 8 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	02 ppm Cond. Temp(C.
% 5.73 :		
95% fid. Limits : 44.2 - 73.4 % Comments : MISA Audit		

SLOPE of Mortality Curve : 5.2 LC50 Calculated By : Probit Analysis

PARAMETERS

	01	8-70 0	0-100	0.6.50	0,0,00	80.00	80.00
	00 48:0	7.8 9.1 255 20.0	8.0 9.1 275 20.0	8.0 8.9 255 20.0	7.9 8.9 280 20.0	7.8 8.9 270 20.0	300
	00:00 00:30 01:00 02:00 24:00 48:00						
I M E	:00 05						
—	0:30 01						
PSED	0 00:00	9.0 8.9 250 20.0	8.7 8.8 275 20.0	8.4 8.7 295 20.0	8.1 8.7 305 20.0	8.0 8.7 305 20.0	7.8 8.7 275
ELAI				- 0	- 0	- 0	
		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond.
TEST	»«	100	09	30	15	2	Control

Ж

SLOPE of Mortality Curve : 4.2 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample Number: 03900423

8.4 8.2 280 20.5 8.3 8.2 292 20.5 8.3 8.3 293 20.5 ELAPSED TIME 00:00 24:00 48:00 20.5 20.5 20.5 20.5 20.5 9.2 9.1 272 20.5 8.7 9.1 282 20.5 8.5 9.1 288 20.5 8.4 9.1 292 20.5 8.4 9.0 294 20.5 8.3 8.9 296 20.5 pH O2 ppm Cond. Temp(C) Temp(C) Temp(C) Temp(C) Temp(C) pH 02 ppm Cond. pH 02 ppm cond. pH 02 ppm Cond. pH 02 ppm Cond. pt 02 ppm cond.

20.5

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TOXICITY TEST PARAMETERS

Sample: 03900533

TOXICITY TEST REPORT

TEST CONDITIONS			Samole	Sample Number: 03
Сопрапу	: Algoma Steel Sault Ste. Marie, ONT		TEST	EL
Region Industry	(*Journ) : Northeast : Iron and Steel		34	
Control point	: Bar & Strip Lagoon, (100)		100	На
Laboratory Sampling Method Sampled By	: BAR : Grab : B. Murray			02 ppm Cond. Temp(C)
Date Collected Received Tested	: 06/28/90 : 06/28/90 at: 1440		20	pH 02 ppm Cond. Temp(C)
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	>	25	PH 02 ppm Cond.
Test Animal	. D. magna			Temp(C)
Length(mm) MORIALITY DATA	•		13	pH O2 ppm Cond. Temp(C)
TEST ELAP	SED TIME TOTAL MORTALITY		9	pH 02 ppm Cond
% 00:00 24:00 48:00	00 48:00	%		Temp(C)
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	200000	90000	Control	02 ppm Cond. Temp(C)
48 Hour LC50	: 50.0 - 100.0			
95% fid. limits	% 0°0 - 0°0 :			
Comments	: LC50 Range 50 - 100			

8.8 279 20.5

8.0 9.0 276 20.5

20.5

8.2 8.9 289 20.5

8.1 9.0 286 20.5

20.5

8.2 9.0 293 20.5

8.1 9.0 292 20.5

20.5

8.3 8.7 300 20.5

20.5

8.1 8.8 257 20.5

7.9 9.0 254 20.5

20.5

7.8 8.8 211 20.5

7.6 8.9 210 20.5

20.5

ELAPSED TIME

unber: 03900533

00:00 24:00 48:00

SLOPE of Mortality Curve : 5.4 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample: 03900626

TOXICITY TEST REPORT

Sample Number: 03900626

00:00 24:00 48:00 ELAPSED TEST CONC.

8.3 8.5 298 21.0	8.3 300 21.0	8.3 8.5 301 21.0	8.2 8.5 302 21.0	8.1 8.4 302 21.0	8.2 8.3 303 21.0
21.0	21.0	21.0	21.0	21.0	21.0
9.0 9.0 290 21.0	8.6 9.0 295 21.0	8.4 9.0 301 21.0	8.3 9.0 303 21.0	8.1 9.0 302 21.0	8.2 9.1 300 21.0
pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)				
100	20	52	5	9	ontrol

Company : Algo			
**			
Region : Northea: Industry : Iron and	Algoma Steel Sault Ste. Marie, ONT (40006) Northeast Iron and Steel		Sample TEST CONC.
Control point : 60 i	60 inch Sewer, (200)		
Laboratory BAR Sampling Method Grab Sampled By B. M. Date Collected 02/26 Received 02/28	BAR Grab B. Murray 02/26/90 02/28/90 02/28/90 at: 1535		100
Type of Bioassay : STATIC (Daphn Test P	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	lity Toxicity	25
Test Animal : D. m Weight(gm) : Length(mm) :	D. magna		13
MORTALITY DATA			
CONC.	TIME	TOTAL MORTALITY	9
% 00:00 24:00 48:00		%	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		00000	Control
48 Hour LC50 : Non	Non-lethal		
95% fid. limits : 0.0	% 0°0 - 0		
Comments : Non-	: Non-lethal		

OXICITY TEST PARAMETERS

ample Number: 03900152

7.9 8.4 117 20.0	8.2 8.2 214 20.0	8.3 8.3 260 20.0	8.3 283 20.0	8.3 293 20.0	8.4 8.1 311 20.0
20.0	20.0	20.0	20.0	20.0	20.0
7-8 9.4 115 20.5	8.5 9.0 221 20.5	8.5 8.7 260 20.5	8.5 8.7 279 20.5	8.4 8.6 294 20.5	8.8 303 20.5
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	(L pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

00:	7.7 8.5 125 20.0	7.7 8.5 225 20.0	7.7 8.5 290 20.0	7.8 8.5 330 20.0	7.8 8.5 350 20.0	7.6 8.9 365
00:00 01:00 02:00 04:00 24:00 48:00	2	~~~	2	5	5	
02:00 04:00						
01:00 02						
00:00	7.7 9.3 110 20.0	7.8 9.1 205 20.0	7.8 9.1 265 20.0	7.9 B.9 300 20.0	7.8 8.9 320 20.0	7.8 8.9 310
1	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond.
CONC.	100	09	30	15	15	Control

TEST CONDITIONS			
Company	: Algoma Steel Sault Ste. Marie, ONT	e, ONT	
Region Industry	(40006) : Northeast : Iron and Steel		
Control point	: 60 inch Sewer,	(200)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : B. Murray : 06/25/90 : 06/27/90 : 06/28/90 at:	1515	
Type of Bioassay	: STATIC (Daphnia magna Test Protocol.	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	. D. magna		
MORTALITY DATA			
CONC.	SED TIME	TOTAL MORTALITY	
% 00:00 24:00 48:00	00 48:00		ж
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	N00000		90000
48 Hour LC50	: >100%		
95% fid. limits	0.0 - 0.0 :	*	
Comments	: LC50 >100		

TOXICITY TEST PARAMETERS

Sample: 03900534

TOXICITY TEST REPORT

	I M E	8:00	7.9 9.0 112 20.5	8.1 8.9 209 20.5	8.2 8.9 255 20.5	8.2 8.9 276 20.5	8.2 8.9 289 20.5	8.2 8.9 298 20.5
	-	24:00 48:00	20.5	20.5	20.5	20.5	20.5	20.5
900534	APSED	00:00	8.0 9.1 108 20.5	8.1 9.1 204 20.5	8.1 9.0 250 20.5	8.1 9.0 273 20.5	8.1 9.0 286 20.5	8.1 9.0 299 20.5
Sample Number: 03900534	F		pH 02 ppm Cond. Temp(C)	t pH O2 ppm Cond. Temp(C)				
Sample	TEST	Z X	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

T I M E	48:00	7.9 8.2 135 20.0	8.2 8.1 225 20.0	8.3 8.1 263 20.0	8.3 8.0 283 20.0	8.3 7.8 293 20.0	8.4 8.1 311 20.0
	24:00	20.0	20.0	20.0	20.0	20.0	20.0
LAPSE	00:00	7.7 9.3 133 20.0	8.3 9.0 224 20.0	8.4 9.0 264 20.0	8.5 8.9 283 20.0	8.5 8.8 292 20.0	8.5 8.8 303 20.0
ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST	×	100	20	25	13	9	Control

TEST CONDITIONS		
Company	: Algoma Steel Sault Ste. Marie, ONI	
Region Industry	: Northeast : Iron and Steel	
Control point	: 30 inch Sewer, (300)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : B. Murray : 06/25/90 : 06/27/90 : 06/28/90 at: 1520	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	cicity
Test Animal Weight(gm) Length(mm)	: D. magna	
MORTALITY DATA		
TEST E L A P	S E D T I M E TOTAL MORTALITY	1L TY
00:00 54:0	24:00 48:00	34
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	2 0.0 - 0.0 :	
Comments	: Non lethal	

TOXICITY TEST PARAMETERS

Sample Number: 03900535

I M E	48:00	7.9 8.9 149 20.5	8.1 9.0 226 20.5	8.2 9.0 264 20.5	8.2 8.9 280 20.5	8.2 9.0 290 20.5	8.3 8.9 300 20.5
D T	24:00	20.5	20.5	20.5	20.5	20.5	20.5
LAPSEI	00:00 24:00 48:00	7.8 9.0 143 20.5	8.0 9.0 221 20.5	8.0 9.0 259 20.5	8.1 9.0 276 20.5	8.0 288 20.5	8.1 9.0 299 20.5
ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)
TEST	, % %	100	20	25	13	•	Control

Sample: 03890312		Lethality Toxicity 1988)	TOTAL MORTALITY % 0 0 0 0 0 0 0 0
TOXICITY TEST REPORT SE	Algoma Steel Sault Ste. Marie, ONT (40006) Northeast Iron and Steel Tube Mill, (400) BAR Grab 11/27/89 11/27/89 11/29/89	: STATIC (Daphnia magna Acute Lethalit Test Protocol. OME, 1988) : D. magna	48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	TEST CONDITIONS Company Region Industry Control point Laboratory Sampling Method Sampled By Sampled By Collected Received Tested	Type of Bioassay :: Test Animal 'Height(gm) :: Length(mm) ::	MORTALIIY DATA TEST CONC. % 00:00 24:00 100 0 0 50 0 0 25 0 0 13 0 0 6 0 0 6 0 0 6 0 0 6 0 0 78 Hour LC50 95% fid, limits ::

TOXICITY TEST PARAMETERS

7.9 8.8 197 19.5 9.0 258 19.5 8.3 9.0 286 19.5 8.3 9.0 304 19.5 8.3 9.1 300 19.5 8.4 9.4 309 19.5 ELAPSED TIME 00:00 24:00 48:00 19.5 19.5 19.5 19.5 19.5 8.7 10.0 189 19.0 8.5 9.5 251 19.0 8.4 9.2 280 19.0 8.4 9.2 295 19.0 8.4 9.3 301 19.0 Sample Number: 03890312 pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) Control TEST CONC. 25 100 50 13 9

19.5

TOXICITY TEST REPORT Sample: 03890364	TOXICITY
TEST CONDITIONS	Sample Nur
Company : Algoma Steel Sault Ste. Marie, ONT	
(4000b) Region : Northeast Industry : Iron and Steel	, , , ,
Control point : Tube Mill, (400)	100 pt
	100 F
Date Collected : 12/13/89 Received : 12/15/89 Tested : 12/16/89 at: 1240	50 000
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25 000
Test Animal : D. magna Height(gm) : Length(mm) :	13 90
MORTALITY DATA	0 i
TEST ELAPSED TIME TOTAL CONC.	9
% 00:00 24:00 48:00 %) -
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control p
48 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 %	
Comments : Non-lethal	

TOXICITY TEST PARAMETERS

	ω	48:00	8.0 8.8 223 19.0	8.2 9.0 261 19.0	8.3 9.1 280 19.0	8.4 9.1 288 19.0	8.3 9.1 294 19.0	8.4 9.1 300 19.0
	D 1	24:00 4	19.0	19.0	19.0	19.0	19.0	19.0
390364	APSEC	00:00	8.3 10.9 222 20.0	8.4 9.3 259 20.0	8.5 9.1 278 20.0	8.5 8.9 287 20.0	8.4 8.9 289 20.0	8.5 8.7 297 20.0
Sample Number: 03890364	E		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST	2 8 8	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 03900070

TOXICITY TEST REPORT

7.8 8.1 135 20.5	8.3 222 20.5	8.3 8.4 263 20.5	8.4 8.4 283 20.5	8.4 8.4 296 20.5	8.4 299 20.5
20.0	20.0	20.0	20.0	20.0	20.0
7.9 9.1 131 20.0	8.1 8.9 218 20.0	8.1 8.7 262 20.0	8.2 8.6 284 20.0	8.2 8.7 294 20.0	8.5 2.99 20.0
pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)				
100	20	52	13	9	Control

07100010 - John II o Jours	Semple Number: 03700147 TEST	100 pH 8.1 02 ppn 9.3 cond, 131 Temp(C) 20.0	50 pH 8.4 02 ppm 9.1 cond. 221 Temp(C) 20.0	25	13 pH 8.5 02 ppm 8.8 02 ppm 8.8 Cond. 285 Temp(C) 20.0	6 pH 8.5 02 ppm 8.8 00d. 300 % Temp(C) 20.0	Control pH 8.5 0 02 ppm 8.8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
TEST CONDITIONS	Company : Algoma Steel Sault Ste. Marie, ONT (40006) Region : Northeast Industry : Iron and Steel	Control point : Tube Mill, (400) Laboratory : BAR Sampling Method : Grab Sampled By : B. Murray	** ** **	Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	<pre>Test Animal : 0. magna Weight(gm) : Length(mm) :</pre>	TEST E L A P S E D T I M E TOTAL CONC.	100 0 0 0 25 25 0 0 0 0 0 0 0 0 0 0 0 0 0

	TOXICITY TEST REPORT Sample: 03900247	ar manufacture of	TOX1C11
TEST CONDITIONS			Samo
Company	: Algoma Steel Sault Ste. Marie, ONI		TEST
Region Industry	(4000s) : Northeast : Iron and Steel		"X
Control point	: Tube Mill, (400)		100
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : B. Murray : 03/26/90 : 03/28/90 at: 1450		20
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)		52
Test Animat Weight(gm) Length(mm)	: D. magna		13
MORTALITY DATA			
CONC.	S E D T I M E MORTALITY		9
% 00:00 24:00 48:00		84	
100 0 0 50 0 0 25 0 0 0 13 0 0 6 control 0 0	00000	00000	Control
48 Hour LC50	: Non-lethal		
95% fid. limits	% 0.0 - 0.0 :		
Comments	: Non-lethal		

TOXICITY TEST PARAMETERS

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Number:	
Sample	TEST

00:00 24:00 48:00

8.1	8.1	8.2	8.2	8.2	8.2
8.9	8.8	8.6	8.7	8.7	8.8
157	219	267	284	300	304
20.0	20.0	20.0	20.0	20.0	20.0
19.5	19.5	19.5	19.5	19.5	19.5
8.4	8.1	8.1	8.1	8.1	8.1
9.4	9.4	9.1	9.1	9.1	8.9
146	225	262	280	289	301
19.5	19.5	19.5	19.5	19.5	19.5
pH	pH	pH	pH	pH	t pH
02 ppm	02 ppm	O2 ppm	O2 ppm	02 ppm	02 ppm
cond.	Cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	25	13	9	

IONS : Algoma Steel Sault Ste Harie, ONI (4000) : Northeast : Iron and Steel : Northeast : Iron and Steel : Iron and Iron and Steel : Iron and Iron an					
Algoria Steel Sault Steel		ole: 03900329	TOX1C1	TOXICITY TEST PARAMETERS	HETERS
Salit Steel			Sample	Sample Number: 03900329	00329
Tube Mill, (400) 100			TEST CONC.	E L /	LAPSED 00:00 24
thod : BAR : Grab : Grab : Grab/32/90 ed : 04/23/90 ed : 04/23/90 ed : 04/23/90 ed : 04/25/90 at: 1120 sssay : STATIC (Daphnia magna Acute Lethality Toxicity lest Protocol. OME, 1988) : D. magna : D. magna : D. magna : D. magna : D. magna : O			100	Ha	8.2
### STATIC Control of the Lethality Toxicity (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) ####	BAR Grab B. Murray 04/23/90 04/25/90 04/26/90 at:		80	OZ ppm Cond. Temp(C) PH OZ ppm Cond.	20.0 20.0 8:4 9:0
13 141A 1500 24:00 48:00 1500		Toxicity	25	Temp(C) pH 02 ppm	20.0 8.5 8.9
F L A P S E D T I M E TOTAL K MORTALITY MORTALITY K MORTALITY MORTALITY K MORTALITY K MORTALITY K MORTALITY MORTALIT	ô		13	Temp(C)	20.0 8.8 8.8
ELAPSED TIME MORTALITY				Temp(C)	20.0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ED TIME 48:00		9	pH 02 ppm cond. Temp(C)	8.5 8.9 294 20.0
: Non-lethal		00000	Contro	of ph Cond. Temp(C)	8.4 298 20.0
Comments : Non lethal	0.0				

8.7 220 19.5

8.4 9.0 220 20.0 20.0

7.9 8.6 141 19.5

ELAPSED TIME

00:00 24:00 48:00

8.2 8.7 19.5 19.5 8.3 8.6 19.5

20.02

sample Number: 03900329 Control CONC. 20 13 100 25

8.3 8.7 288 19.5

20.02

20.02

8.3 300 19.5

20.0

TOXICITY TEST PARAMETERS

Sample: 02900092

TOXICITY TEST REPORT

7.6 8.7 315 20.0

7.8 8.7 300 20.0

7.8 8.6 165 20.0

TIME

7.8 8.7 235 20.0

7.9 8.7 275 20.0

7.7 8.7 295 20.0

26

TEST CONDITIONS

Company

Sample: 03900424				Lethality Toxicity 1988)	
TOXICITY TEST REPORT	: Algoma Steel Sault Ste. Marie, ONI (40006) : Northeast : Iron and Steel	: Tube Mill, (400)	: BAR : Grab : B. Murray : 05/28/90 : 05/30/90 : 05/31/90 at: 1130	: STATIC (Daphnia magna Acute Le Test Protocol, OME, 19	. D. magna

Laboratory Sampling Method Sampled By Date Collected Received Tested

Control point

Region Industry Type of Bioassay

MORTALITY DATA

Test Animal Weight(gm) Length(mm)

TOTAL MORTALITY	**	00000
ELAPSED TIME	00:00 24:00 48:00	00000
TEST CONC.	8	100 50 25 13 6 Control

Non-lethal	× 0.0 -	ethal
Non-	0.0	Non-lethal
**	••	
48 Hour LC50	95% fid. limits	Comments

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900424

I M E	48:00	7.9 8.5 166 20.5	8.2 8.4 232 20.5	8.3 8.3 265 20.5	8.3 8.3 280 20.5	8.3 8.3 290 20.5	8.3 8.3 296 20.5
-	7 00:57	20.5	20.5	20.5	20.5	20.5	20.5
APSED	00:00 24:00 48:00	8.1 9.1 167 20.5	8.2 9.1 229 20.5	8.3 9.0 262 20.5	8.3 9.0 278 20.5	8.4 9.0 289 20.5	8.3 8.9 296 20.5
EL		pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)				
TEST	, % %	100	20	52	13	•	Control

TOXICITY TEST PARAMETERS

Sample: 03900536

TOXICITY TEST REPORT

	I M E	48:00	7.8 8.7 141 20.5	8.1 8.9 222 20.5	8.2 9.0 262 20.5	8.2 8.9 279 20.5	8.2 9.0 291 20.5	8.3 8.9 302 20.5
	T 0	00:00 24:00 48:00	20.5	20.5	20.5	20.5	20.5	20.5
0000000	LAPSE	00:00	7.7 9.0 134 20.5	7.9 9.0 215 20.5	8.0 9.0 254 20.5	8.1 9.0 273 20.5	8.1 9.0 288 20.5	8.1 9.0 299 20.5
Sample Mumber: USYUUSSO	ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Tenp(C)	oz ppm cond. Temp(C)
andure	TEST	, , , , , , , , , , , , , , , , , , ,	100	50	52	13	9	Control

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SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900627

TOXICITY TEST REPORT

8.2 8.5 294 21.0

pH 02 ppm Cond. Temp(C) 21.0

Control pH 02 ppm Cond. Temp(C)

8.1 8.5 217 21.0

pH O2 ppm Cond. Temp(C)

20

21.0

ELAPSED TIME

TEST CONC.

Sample Number: 03900627

00:00 24:00 48:00

8.0 9.1 126 21.0

pH O2 ppm Cond. Temp(C)

100

8.2 8.5 261 21.0

pH O2 ppm Cond. Temp(C)

25

21.0

8.2 8.4 282 21.0

pH O2 ppm Cond. Temp(C)

13

21.0

Sample Number: 03900148

TOXICITY TEST PARAMETERS

1 M E	8.0	8.2	8.3	8.4	8.2	8.4
	8.1	8.0	8.0	7.9	8.0	7.7
	115	214	262	284	296	311
	20.0	20.0	20.0	20.0	20.0	20.0
D T	20.0	20.0	20.0	20.0	20.0	20.02
L A P S E 00:00	7.9	8.3	8.5	8.5	8.5	8.5
	9.3	9.0	8.9	8.9	8.9	8.8
	112	212	261	284	292	303
	20.0	20.0	20.0	20.0	20.0	20.0
ш	pH	pH	pH	pH	pH	pH
	02 ppm	O2 ppm	02 ppm	O2 ppm	O2 ppm	02 ppm
	Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
TEST CONC.	100	20	25	13	9	Control

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TOXICITY TEST PARAMETERS

Sample: 02900097

TOXICITY TEST REPORT

TEST CONDITIONS		o Company	Sample Marker, 02000007	1007
Сопрапу	: Algoma Steel Sault Ste. Marie, ONT	TEST CONC	E L A	PSED TIME
Region Industry	: Northeast : Iron and Steel			00:00 01:00 02:00
Control point	: Cold Mill 24 inch, (500)	000	1	7.7
Laboratory Sampling Method Sampled By Date Collected	: MOE : Grab : M. Smithson : 05/23/90		Cond.	20.0
Received		000	ph 02 ppm Cond. Temp(C)	9.0 200 20.0
Type of Bloassay	: SIATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	30 6	pH 02 ppm Cond.	7.8 8.9 260
Test Animal Weight(gm)	. D. magna		Temp(C)	20.0
Length(mm) MORTALITY DATA		55	pH 02 ppm Cond. Temp(C)	7.9 8.9 285 20.0
TEST E L A P	SED TIME TOTAL MORTALITY	5	pH 02 ppm	7.9
x 00:00 01:00	00 02:00 04:00 24:00 48:00		Cond. Temp(C)	20.0
100 0 0 60 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0		Control	pH O2 ppm Cond. Temp(C)	7.8 8.9 275 20.0
48 Hour LC50	: Non-lethal			
95% fid. limits	% 0.0 - 0.0 :			
Comments	: MISA Audit; Non-lethal			

7.7 8.6 135 20.0

00:00 01:00 02:00 04:00 24:00 48:00

7.8 8.6 205 20.0

7.7 8.6 20.0 20.0 7.8 8.6 20.0

7.7 8.6 310 20.0 7.6 8.6 300 20.0

TOXICITY TEST PARAMETERS

1 M E	.8:00	7.8 8.8 114 20.5	8.1 8.9 207 20.5	8.2 9.0 253 20.5	8.2 9.0 276 20.5	8.2 8.9 288 20.5	8.3 8.9 300 20.5
0	7 00:57	20.5	20.5	20.5	20.5	20.5	20.5
APSE	00:00 24:00 48:00	7.8 9.1 106 20.5	8.0 9.1 199 20.5	8.1 9.1 246 20.5	8.1 9.0 269 20.5	8.1 9.0 284 20.5	8.1 9.0 299 20.5
E L		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST	, X	100	20	25	13.	9	Control

TOXICITY TEST REPORT Sample: 03890313	TEST CONDITIONS	Company : Algoma Steel Sault Ste. Marie, ONT	Region : Northeast Industry : Iron and Steel	Control point : Terminal Settling Basin, (700)	Laboratory : BAR Sampling Method : Grab Sampled By : B. Murray Date Collected : 11/27/89 Received : 11/29/89 at: 1150	Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	<pre>Test Animal : D. magna Weight(gm) : Length(mm) :</pre>	MORTALITY DATA	TOTAL CONC. HORTALITY	% 00:00 24:00 48:00 %	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	48 Hour LC50 : Non-lethal	95% fid. limits : 0.0 - 0.0 %	Comments : Non-lethal

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03890313

I M E	7.6	8.1	8.2	8.3	8.3	8.4
	8.5	8.9	9.0	9.0	9.1	9.3
	205	261	288	300	302	308
	19.5	19.5	19.5	19.5	19.5	19.5
PSED TIME 00:00 24:00 48:00	19.5	19.5	19.5	19.5	19.5	19.5
00:00	7.6	8.1	8.3	8.3	8.3	8.4
	9.9	9.4	9.2	9.2	9.3	9.1
	202	255	282	295	303	306
	19.0	19.0	19.0	19.0	19.0	19.0
ш	pH	pH	pH	pH	pH	L pH
	02 ppm	02 ppm	02 ppm	02 ppm	O2 ppm	02 ppm
	Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
TEST CONC.	100	50	52	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 03890365

TOXICITY TEST REPORT

TEST CONDITIONS		o lomo?	Comp. Mumbor. 03000021	1,200
Сопралу	: Algoma Steel Sault Ste. Marie, ONT	TEST	E L A	LAPSE
Region Industry	: Northeast : Iron and Steel	%		00:00
Control point	: Terminal Settling Basin, (700)	1001	= 0	7
Laboratory Sampling Method Sampled By	: BAR : Grab : B. Murray	2	Cond.	20.02
Tested	: 01/25/90 at: 1515	20	DH O2 ppm Cond. Temp(C)	8.08.02
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm	88.7
Test Animal Weight(gm)	: D. magna		Temp(C)	20.0
Length(mm) MORIALITY DATA		13	pH O2 ppm Cond. Temp(C)	88.60
TEST ELAP	SED TIME TOTAL MORTALITY	9	рН 02 ррт	8.8
% 00:00 54:0	24:00 48:00		Cond. Temp(C)	20.0
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	800000	Control	pH 02 ppm Cond. Temp(C)	20.02
48 Hour LC50	: >100%			
95% fid. limits	% 0.0 - 0.0 :			
Comments	: LC50 >100			

HICHTY TEST PARAMETERS

ME	00:0	7.8 8.1 198 20.5	8.2 8.3 251 20.5	8.3 8.3 276 20.5	8.3 8.4 289 20.5	8.4 8.4 298 20.5	8.4 8.4 296 20.5
D T 1	00:04 00:42	20.0	20.0	20.0	20.0	20.0	20.0
A P S E	00:00	7.7 9.1 198 20.0	8.0 8.9 251 20.0	8.1 8.7 277 20.0	8.2 8.6 290 20.0	8.1 8.6 296 20.0	8.5 299 20.0
EL		pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)				
TEST CONC.	્	100	50	25	13	•	Control

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TOXICITY TEST PARAMETERS

Sample: 03900153

TOXICITY TEST REPORT

TEST CONDITIONS	
Company	
Industry	: Iron and Steel
Control point	: Terminal Settling Basin, (700)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: Grab : Grab : B. Murray : 02/26/90 : 02/28/90 at: 1550
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	: D. magna :
MORTALITY DATA	
TEST E L A P	SED TIME TOTAL MORTALITY
% 00:00 24:00	% 0 78:00 %
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
48 Hour LC50	: Non-lethal
95% fid. limits	% 0.0 - 0.0 :
Comments	: Non-lethal

20.0

pH O2 ppm Cond. Temp(C)

13

20.02

20.0

pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C)

Control

20.0

pH 02 ppm Cond. Temp(C)

25

20.0

pH 02 ppm Cond. Temp(C)

50

pH 02 ppm Cond. Temp(C)

100

ELAPSED TIME

TEST CONC.

Sample Number: 03900153

00:00 24:00 48:00

	TOXICITY TEST REPORT Sample: 03900248	
TEST CONDITIONS		
Company	: Algoma Steel Sault Ste. Marie, ONT	
Region Industry	: Northeast : Iron and Steel	
Control point	: Terminal Settling Basin, (700)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab 18. Murray 103/26/90 103/28/90 at: 1530	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	: D. magna :	
MORTALITY DATA		
TEST ELAPS	E D T I M E TOTAL MORTALITY	
% 00:00 24:00	x 00:87	
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	
48 Hour LC50	: Non-lethal	
95% fid. limits	% 0°0 - 0°0 :	
Comments	: Non-lethal	

TOXICITY TEST PARAMETERS

Sample Number: 03900248

D TIME 24:00 48:00	7.9 8.0 194 19.5 20.0	8.0 8.5 249 19.5 20.0	8.1 8.7 275 19.5 20.0	8.2 8.7 291 19.5 20.0	8.2 8.9 299 19.5 20.0	8.3 9.0 309 19.5 20.0
A P S E	8.1	8.0	8.1	8.1	8.0	8.1
	9.7	9.5	9.2	9.1	9.2	8.9
	190	244	272	286	290	301
	19.5	19.5	19.5	19.5	19.5	19.5
EL	pH	pH	pH	pH	pH	of pH
	O2 ppm	02 ppm	02 ppm	02 ppm	02 ppm	O2 ppm
	Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
TEST CONC.	100	50	52	13	9	Control

MISA Daphnia

SLOPE of Mortality Curve : LC50 Calculated By :

TEST CONDITIONS			1020 sub-duality	OZZO
Company Region Industry	Sault Steel Sault Ste. Marie, ONI (40006) . Northeast : Iron and Steel	Sample TEST CONC.	Number:	03900530 E L A P S E 00:00
ਚ	: Terminal Settling Basin, (700) : BAR : Grab : B. Murray	100	pH 02 ppm Cond. Temp(C)	7.5 9.2 228 20.0
Date Collected Received Tested	: 04/23/90 : 04/25/90 : 04/26/90 at: 1125	50	pH 02 ppm cond. Temp(C)	8.1 9.1 263 20.0
assay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna	25	pH 02 ppm Cond. Temp(C)	8.3 9.1 281 20.0
Weight(gm) Length(mm) MORTALITY DATA		13	pH 02 ppm Cond. Temp(C)	8.4 9.1 291 20.0
TEST E L A P S CONC. % 00:00 24:00	APSED TIME TOTAL MORTALITY 24:00 48:00	9	pH 02 ppm Cond. Temp(C)	8.3 9.2 298 20.0
100 0 0 50 0 0 25 0 0 0 6 0 0 6 Control 0 0 48 Hour LC50 95% fid. limits	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	ol pH O2 ppm Cond. Temp(C)	8.7 20.0 20.0 20.0

8.2 8.7 279 19.5

20.02

8.3 9.1 281 20.0 8.4 9.1 291

7.9 8.5 261 19.5

8.1 9.1 263 20.0

20.02

7.5 8.2 227 19.5

7.5 9.2 228 20.0

20.02

TIME

ELAPSED

00:00 24:00 48:00

8.2 8.7 288 19.5

20.0

8.3 8.7 291 19.5

8.3 9.2 298 20.0

20.02

8.3 8.4 301 19.5

20.02

TOXICITY TEST PARAMETERS

Sample: 02900098

TOXICITY TEST REPORT

Sample Number: 02900098	TEST ELAPSED TIME CONC.	% 00:00 00:30 01:00 02:00 24:00 48:00	0 7	100 ph 8.0 6.2 (.2 cond. 185 200 1cmp(C) 20.0	60 pH 7.3 7.1 02 ppm 8.5 8.8 Cond. 240 245 Temp(C) 20.0	7.6	15 pH 7.7 7.6 02 ppm 8.7 8.9 Cond. 295 295	c) 20.0	5 pH 7.8 7.7 02 ppm 8.7 200	c) 20.0	Control pH 7.3 7.8 6.9 6.9 6.8 6.8 6.8 6.0 255 315 7.0 20.0			
TEST CONDITIONS	: Algona Steel Sault Ste. Marie, ONT (40006)	Region : Northeast Industry : Iron and Steel	Control point : Terminal Settling Basin, (700)	Sampling Method : Grab Sampled By : M. Samithson	Received : 05/31/90 at: 1300	Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	Length(mm) :	MORTALITY DATA	ELAPSED TIME TOTAL MORTALITY	00:00 00:30 01:00 02:00 24:00 48:00	100 0 0 0 0 1 8 60 0 0 0 0 0 1 30 0 0 0 0 0 0 0 15 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 60 0 0 0 0 0 60 0 0 0 0 0	48 Hour LC50 : >100%	95% fid. limits : 0.0 - 0.0 %	Comments : MISA Audit

TOXICITY TEST PARAMETERS

Sample: 03900425

TOXICITY TEST REPORT

I M E	7.6	8.0	8.2	8.2	8.2	8.3
	8.4	8.5	8.5	8.5	8.5	8.5
	273	284	290	294	295	296
	20.5	20.5	20.5	20.5	20.5	20.5
PSED TIME 00:00 24:00 48:00	20.5	20.5	20.5	20.5	20.5	20.5
LAPSE 00:00	7.5	8.0	8.2	8.3	8.3	8.3
	9.0	9.1	9.0	9.0	9.0	8.9
	274	284	289	293	294	296
	20.5	20.5	20.5	20.5	20.5	20.5
ш	pH	pH	pH	pH	pH	pH
	02 ppm					
	Cond.	cond.	Cond.	Cond.	Cond.	cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
TEST CONC.	100	20	25	13	9	Control

TEST CONDITIONS		
Company Region Industry	: Algoma Steel Sault Ste. Marie, ONI (40006) : Northeast	TEST CONC.
Control point		
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR Grab : B. Murray : 06/25/90 : 06/28/90 at: 1550	000
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1983)	25
Test Animal Weight(gm) Length(mm)	: D. magna	13
MORTALITY DATA		
TEST E L A P S	SED TIME TOTAL MORTALITY	9
% 00:00 24:00	24:00 48:00 %	
100 0 0 50 0 0 25 0 0 0 13 0 0 0 6 control 0 0	00000	Control
48 Hour LC50	: Non-lethal	
95% fid. limits	% 0.0 - 0.0 :	
Comments	: Non lethal	

TY TEST PARAMETERS

I M E	7.6	8.0	8.1	8.2	8.3	8.3
	8.7	8.8	8.9	8.9	8.9	8.9
	222	261	281	290	295	300
	20.5	20.5	20.5	20.5	20.5	20.5
D T 1	20.5	20.5	20.5	20.5	20.5	20.5
A P S E 00:00	7.2	7.7	7.9	8.0	8.1	8.1
	8.9	9.0	9.0	9.0	9.1	9.0
	216	255	276	285	290	299
	20.5	20.5	20.5	20.5	20.5	20.5
E	pH	pH	pH	pH	pH	pH
	02 ppm	02 ppm	02 ppm	O2 ppm	O2 ppm	O2 ppm
	Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
TEST CONC.	100	50	25	13	9	Control

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TEST CONDITIONS	
Сопрапу	: Algoma Steel Sault Ste. Marie, ONT
Region Industry	(40006) : Northeast : Iron and Steel
Control point	: Terminal Settling Basin, (700)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab B. Murray 07/23/90 07/25/90 at: 940
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	. D. magna
MORTALITY DATA	
TEST ELAPS	E D T I M E HORTALITY
% 00:00 24:00	48:00 %
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50	: Non-lethal
95% fid. limits	% 0.0 - 0.0 :
Comments	: Non lethai

TOXICITY TEST PARAMETERS

Sample: 03900628

TOXICITY TEST REPORT

Sample Number: 03900628

I M E	.8:00	7.3 8.3 260 19.5	7.9 8.8 279 19.5	8.2 9.1 289 19.5	8.3 9.0 294 19.5	8.3 9.0 296 19.5	8.4 8.9 299 19.5
D T	24:00 48:00	20.5	20.5	20.5	20.5	20.5	20.5
APSE	00:00	7.2 9.1 263 21.0	7.8 9.1 280 21.0	8.1 9.0 289 21.0	8.2 9.0 295 21.0	8.3 9.0 296 21.0	8.3 9.0 300 21.0
E L		pH 02 ppm Cond. Temp(C)					
TEST	, % , %	100	50	25	13	9	Control

ELAPSED TIME

.: 03900426

SLOPE of Mortality Curve : 5.6 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample: 03900426

TOXICITY TEST REPORT

00:00 24:00 48:00

7.8 8.9 112 20.5

8.0 9.1 113 20.5 8.6 212 20.5

8.2 9.1 207 20.5

TEST CONDITIONS			
Сопрапу	: Algoma Steel Sault Ste. Marie, ONY	Sample	Sample Number: 039 TEST E L
Region Industry	: Northeast : Iron and Steel	CONC	
Control point	: Boiler House, (800)		
7 B	BAR Grab B. Murray 05/28/90	100	pH 02 ppm Cond. Temp(C)
Tested	: 05/31/90 at: 1415		pH 02 ppm Cond.
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	52	Temp(C) pH 02 ppm
Test Animal Weight(gm) Length(mm)	. D. magna	Ç	Cond. Temp(C)
MORTALITY DATA		2	Cond.
CONC.	E D T I M E TOTAL MORTALITY	9	PH do
% 00:00 24:00 48:00	48:00		Cond.
100 0 12 50 0 12 25 0 11 13 0 2 6 0 0 Control 0 0	12 12 100 100 100 0 0 0 0	Control	
48 Hour LC50	: 11.4 %		
95% fid. limits	: 9.0 - 14.4 %		
Comments	**		

8.8 282 20.5

8.2 9.0 270 20.5

20.5

20.5

8.2 9.1 251 20.5 8.3 8.5 293 20.5

8.2 9.0 284 20.5

20.5

8.3 8.4 301 20.5

20.5

COUNTY TOWN	
Сопрапу	: Algoma Steel Sault Ste. Marie, ONT (40006)
Region Industry	: Northeast : Iron and Steel
Control point	: Boiler House, (800)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : B. Murray : 06/25/90 : 06/27/90 : 06/29/90 at: 1110
Type of Bioassay	; STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	. D. magna
MORTALITY DATA	
TEST E L A P	SED TIME TOTAL MORTALITY
% 00:00 24:00	00 48:00 %
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
48 Hour LC50	: >100%
95% fid. limits	% 0.0 - 0.0 :
Comments	: LC50 >100

TOXICITY TEST PARAMETERS

Sample: 03900539

TOXICITY TEST REPORT

Sample Number: 03900539

ELAPSED TIME

TEST CONC.

00:00 24:00 48:00

8.0	8.3	8.4	8.4	8.4	8.5
8.9	8.9	8.9	8.9	8.9	8.8
109	206	256	274	286	299
20.5	20.5	20.5	20.5	20.5	20.5
20.5	20.5	20.5	20.5	20.5	20.5
8.1	8.4	8.4	8.5	8.5	8.5
9.1	9.0	8.9	8.9	8.9	8.9
105	200	246	266	281	294
20.0	20.0	20.0	20.0	20.0	20.0
pH	pH	pH	pH	pH	t pH
02 ppm	02 ppm	O2 ppm	02 ppm	02 ppm	02 ppm
Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	52	13	9	Control

TEST CONDITIONS		
Сопрапу	: Algoma Steel Sault Ste. Marie, ONI	
Region Industry	(40006) : Northeast : Iron and Steel	
Control point	: #2 Steel Making CW, (1000)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab B. Murray 02/26/90 02/28/90 02/28/90 at: 1510	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	ity
Test Animal Weight(gm) Length(mm)	: D. magna	
MORTALITY DATA		
CONC.	E D T I M E MORTALITY	
x 00:00 24:00	48:00	%
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	% 0°0 - 0°0 :	
Comments	: Non-lethal	

TOXICITY TEST PARAMETERS

Sample Number: 03900150

1 M E 48:00	8.3 124 20.0	8.2 8.2 218 20.0	8.3 8.2 262 20.0	8.3 8.1 283 20.0	8.3 8.1 296 20.0	8.4 8.0 311 20.0
D T 24:00 4	20.0	20.0	20.0	20.0	20.0	20.0
LAPSED 71ME 00:00 24:00 48:00	7.9 9.3 120 20.0	8.3 9.0 216 20.0	8.5 9.0 261 20.0	8.5 8.8 284 20.0	8.8 8.8 293 20.0	8.5 8.8 303 20.0
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	20	25	13	%	Control

TOXICITY TEST PARAMETERS

Sample: 02900094

TOXICITY TEST REPORT

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TOXICITY TEST PARAMETERS

Sample: 03900540

TOXICITY TEST REPORT

TEST CONDITIONS		Sample	Sample Number: 03900540	00540
Сопрапу	: Algona Steel Sault Ste. Marie, ONI	TEST	EL	ELAPS
Region Industry	(4000) : Northeast : Iron and Steel			00:00
Control point	: #2 Steel Making CW, (1000)	100	Ha	
Laboratory Sampling Method Sampled By	: BAR : Grab : B., Murray		02 ppm Cond. Temp(C)	122
Date Collected Received Tested	: 06/25/90 : 06/27/90 : 06/29/90 at: 1155	20	pH 02 ppm Cond. Temp(C)	2002
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm	88.6
Test Animal Weight(gm) Length(mm)	: D. magna :	13	Temp(C) pH 02 ppm Cond.	20.02
TEST ELAP	SED TIME TOTAL MORTALITY	9	pH 02 ppm	
% 00:00 24:00 48:00			Cond. Temp(C)	28.
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	Control pH 02 Co	1 pH O2 ppm Cond Temp(C)	20.02
48 Hour LC50 95% fid. limits	: Non-lethal : 0.0 - 0.0 %			
Comments	: Non lethal			

8.4 9.0 256 20.5

8.4 8.9 248 20.0

20.5

8.4 9.0 275 20.5

8.4 8.9 269 20.0

20.5

8.4 9.0 285 20.5

8.5 8.9 282 20.0

20.5

20.5

8.0 9.0 129 20.5

7.9 9.0 122 20.0

20.5

ELAPSED TIME

00:00 24:00 48:00

8.2 9.0 215 20.5

8.3 9.0 207 20.0 20.5

TOXICITY TEST PARAMETERS

Sample Number: 03900154

1 M E 48:00	7.9 8.1 116 20.0	8.2 8.0 215 20.0	8.3 8.0 261 20.0	8.3 8.1 283 20.0	8.3 8.2 296 20.0	8.4 8.1 310 20.0
T	20.0	20.0	20.0	20.0	20.0	20.0
A P S E	7.8 9.7 112 20.5	8.3 9.3 212 20.5	8.5 9.2 260 20.5	8.5 9.1 279 20.5	8.5 9.0 294 20.5	8.8 303 20.5
ᄖ	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	20	25	13	9	Control

MISA Daphnia		SLOPE of Mortality Curve : LC50 Calculated By :
	TOXICITY TEST REPORT Sample: 02900093	TOXICITY TEST PARAMETERS
TEST_CONDITIONS Company Region Industry	: Algoma Steel Sault Ste. Marie, ONT (4006) : Northeast : Iron and Steel	Sample Number: 02900093 TEST E L A P S E D CONC.
Control point Laboratory Sampling Method	: Cold Mill 20 inch, (1500) : MOE : Grab	100 pH 7.6 02 ppm 9.5 Cond. 110
Sampled By Date Collected Received Tested	: M. Smithson : 05/23/90 : 05/28/90 : 05/28/90 at: 1400	60 pH 7.7 02 ppm 9.1 Cond. 205 Temp(C) 20 05
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	: D. magna	(C)
MORTALITY DATA		Cond. 285 Temp(C) 20.0
⊢ 0	TOTAL MORTALITY	5 pH 7.8 02 ppm 8.9 Cond. 300
% 00:00 01:0	00:00 01:00 02:00 04:00 24:00 48:00	Temp(C) 20.0
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Control pH 7.3 02 ppm 8.9 Cond. 300 Temp(C) 20.0
48 Hour LC50	: Non-lethal	
95% fid. limits	% 0.0 - 0.0 :	
Comments	: MISA Audit; Non-lethal	

7.7 8.7 315 20.0

7.6 8.6 280 20.0

7.7 8.7 135 20.0

00:00 01:00 02:00 04:00 24:00 48:00

ELAPSED TIME

7.7 8.7 20.0 7.8 8.8 8.8 270 20.0 7.8 8.7 8.7

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SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900541

TOXICITY TEST REPORT

TEST CONDITIONS		Sample	Sample Number: 03900541	10541
Company : Algoma Steel Sault Ste. Marie, ONI		TEST CONC.	ELA	ELAPSE
Region : Northeast Industry : Iron and Steel		3 ¢		00:00
Control point : Cold Mill 20 inch, (1500)		100	Hd	7.
77			02 ppm Cond. Temp(C)	20.0
Date Collected : 06/25/90 Received : 06/27/90 Tested : 06/29/90 at: 1210		20	pH O2 ppm Cond. Temp(C)	9.02
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity lest Protocol. OME, 1988)	hality Toxicity 8)	25	pH 02 ppm Cond.	20.0
Test Animal : D. magno Length(mm) :		13	Temp(C) pH 02 ppm Cond.	8.8.8
MORTALITY DATA			lemp(C)	20
TEST ELAPSED TIME CONC.	TOTAL MORTALITY	9	pH 02 ppm Cond.	28.8
x 00:00 24:00 48:00	36		Temp(C)	50
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000088	Control pH 02 02 02 02 02 02 02 02 02 02 02 02 02	t pH 02 ppm Cond. Temp(C)	,
48 Hour LC50 : >100%				
95% fid. limits : 0.0 - 0.0 %				
Comments : LC50 >100				

8.7 296 20.5

20.5

8.4 9.0 284 20.5

8.4 8.9 278 20.0

20.5

8.4 9.0 271 20.5

8.4 8.9 264 20.0

20.5

8.3 9.1 249 20.5

8.4 9.0 242 20.0

20.5

8.0 9.1 110 20.5

7.9 9.1 103 20.0

20.5

ELAPSED TIME

00:00 24:00 48:00

8.2 9.1 205 20.5

8.3 9.0 197 20.0

20.5

TOXICITY TEST PARAMETERS

M E	72:00	8.1 8.7 125 20.5	8.3 8.6 217 20.5	8.4 8.6 259 20.5	8.4 8.6 285 20.5	8.5 8.1 297 20.5	8.5 8.4 305 20.5
1 0		20.0	20.0	20.0	20.0	20.0	20.02
LAPSE	24:00 48:00	7.9 9.1 125 20.0	8.3 9.0 218 20.0	8.5 8.9 263 20.0	8.5 8.9 282 20.0	8.5 8.8 292 20.0	8.5 8.8 300 20.0
ш		pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
TEST CONC.	36	100	20	52	13	9	Control

SLOPE of Mortality Curve : 4.2 LC50 Calculated By : Probit Analysis

			Acute Lethality Toxicity OME, 1988)			TOTAL MORTALITY %	100 100 50 25 8
TEST CONDITIONS	Company : Algoma Steel Sault Ste. Marie, ONT (40006) : Northeast Industry : Iron and Steel	70	 assay : STATIC (Daphnia magna Test Protocol.	Test Animal : D. magna Weight(gm) : Length(mm) :	MORTALITY DATA	TEST E L A P S E D T I M E CONC. % 00:00 01:00 02:00 04:00 24:00 48:00	100 0 0 0 0 6 12 30 0 0 0 0 0 12 31 0 0 0 0 0 0 6 15 0 0 0 0 0 0 5 5 Control 0 0 0 0 0 1

TOXICITY TEST PARAMETERS

Sample: 03900542

TOXICITY TEST REPORT

TEST CONDITIONS	Sample	Sample Number: 03900542	0542		
Company : Algoma Steel	TEST	ELA	ELAPSED		TIME
Region : Northeast Industry : Iron and Steel			00:00 24:00 48:00	00:57	8:00
	100	pH 02 ppm Cond. Temo(C)	8.0 9.0 110	20.5	8.0 9.0 116 20.5
	20	pH O2 ppm Cond. Temp(C)	8.3 8.9 201 20.0	20.5	8.3 9.1 208 20.5
assay	25	pH 02 ppm Cond. Temp(C)	8.4 8.9 245 20.0	20.5	8.4 9.1 252 20.5
ATA	13	pH O2 ppm Cond. Temp(C)	8.4 8.9 265 20.0	20.5	8.4 9.1 272 20.5
T ELAPSED TIME TOTAL MORTALITY	9	pH 02 ppm Cond.	8.9		8.4 9.1 284
% 00:00 24:00 48:00 %		Temp(C)	20.0	20.5	20.5
100 0 0 0 16 50 0 0 2 25 0 0 0 0 13 0 0 0 0 6 0 0 2 16 Control 0 1 1	Control	DH DON OZ POM COND.	8.5 8.9 294 20.0	20.5	8.4 8.7 297 20.5
48 Hour LC50 : >100% 95% fid. (imits : 0.0 - 0.0 % Comments : LC50 >100					

TEST CONDITIONS		
Сопрапу	: Algoma Steel Sault Ste. Marie, ONT	
Region Industry	(40006) : Northeast : Iron and Steel	
Control point	: #2 Tube Mill, (1800)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR 6 Grab 11/27/89 11/29/89 11/30/89 at: 1115	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	: D. magna :	
MORTALITY DATA		
TEST ELAPS CONC.	ED TIME TOTAL MORTALITY	
% 00:00 24:00	48:00	%
100 0 0 50 50 0 0 1 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00=000	008000
48 Hour LC50	: >100%	
95% fid. limits	% 0.0 - 0.0 :	
Comments	: LC50 >100% effluent concentration	

TOXICITY TEST PARAMETERS

Sample: 03890314

TOXICITY TEST REPORT

8.0 8.5 230 19.5 8.8 287 19.5 8.3 9.0 301 19.5 7.5 8.2 150 19.5 8.2 8.7 269 19.5 8.4 9.2 307 19.5 ELAPSED TIME 00:00 24:00 48:00 19.5 19.5 19.5 19.5 19.5 8.3 9.2 270 19.0 7.6 10.0 148 19.0 8.3 9.2 288 19.0 8.4 9.3 300 19.0 8.1 9.4 232 19.0 Sample Number: 03890314 pH 02 ppm Cond. Temp(C) Control TEST CONC. 20 9 13 100 25

19.5

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SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

M E	00:00	8.1 8.8 180 19.0	8.2 8.9 239 19.0	8.3 9.0 268 19.0	8.4 9.0 282 19.0	8.4 8.9 289 19.0	8.4 9.2 301 19.0
1 1	7 00:4	19.0	19.0	19.0	19.0	19.0	19.0
<	00:00 74:00 48:00	8.0 10.7 178 20.0	8.3 9.4 238 20.0	8.4 9.0 267 20.0	8.4 8.8 281 20.0	8.8 288 20.0	8.5 8.7 297 20.0
EL		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	l pH 02 ppm cond. Temp(C)
TEST CONC.	R	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.3 8.2 285 20.5 7.9 8.0 168 20.5 8.2 8.1 236 20.5 8.3 8.2 269 20.5 8.4 8.3 295 20.5 TIME 00:00 24:00 48:00 20.02 20.02 20.0 20.0 20.0 20.0 ELAPSED 8.6 286 20.0 8.2 8.5 293 20.0 8.1 8.7 270 20.0 8.1 8.9 236 20.0 7.7 9.2 166 20.0

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SLOPE of Mortality Curve : 5.9 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample: 03900147

TOXICITY TEST REPORT

TEST CONDITIONS	Samole	Sample Number: 03900147	25		
Company : Algoma Steel					
	TEST CONC.	ELAP	SED	-	M .
Region : Northeast Industry : Iron and Steel	×	0	00:00 24:00 48:00	7:00	48:00
7	100	pH 02 ppm Cond. Temp(C)	7.9 9.2 116 20.0	7.8 9.2 117 20.0	
Collected Received Tested	90	pH 02 ppm Cond. Temp(C)	8.3 8.9 214 20.0	20.02	8.2 8.0 221 20.0
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH O2 ppm Cond. Temp(C)	8.4 8.9 261 20.0	20.0	8.3 8.0 266 20.0
AIA	. 13	pH 02 ppm Cond. Temp(C)	8.5 8.9 284 20.0	20.02	8.4 8.0 289 20.0
TEST E L A P S E D T I M E TOTAL CONC. MORTALITY % 00:00 24:00 48:00	9	pH 02 ppm cond. Temp(C)	8.5 8.8 299 20.0	20.0	8.3 8.0 299 20.0
100 0 12 12 100 100 100 11 12 100 100 10	Control	of ph Cond. Temp(C)	8.5 8.8 303 20.0	20.0	8.3 7.3 313 20.0
95% fid. limits : 22.3 - 34.7 % Comments :					

×

8.2 8.9 306 20.0

19.5

8.2 8.7 295 20.0

19.5

8.1 8.5 284 20.0

8.0 8.6 282 19.5

19.5

8.3 260 20.0

8.8 259 19.5

19.5

7.9 8.1 222 20.0

7.9 8.8 218 19.5

19.5

19.5

7.7 8.8 129 19.5

ELAPSED TIME 00:00 24:00 48:00

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TOXICITY TEST PARAMETERS

Sample: 03900331

TOXICITY TEST REPORT

TEST CONDITIONS	
Company : Algoma Steel Sault Ste. Marie, ONI	
Region : Northeast Industry : Iron and Steel	
Control point : #2 Tube Mill, (1800)	
Laboratory : BAR Sampling Method : Grab Sampled By : B. Murray Date Collected : 04/23/90 Received : 04/25/90 Tested : 04/26/90 at: 1135	
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal : D. magna : Length(gm) : Length(mm)	
MORTALITY DATA	
TEST ELAPSED TIME TOTAL CONC.	
% 00:00 24:00 48:00	ж
100 0 0 0 0 50 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50 : Non-lethal	
95% fid. Limits : 0.0 - 0.0 %	
Comments : Non lethal	

8.2 8.7 256 20.0

pH O2 ppm Cond. Temp(C)

25

20.02

8.4 9.1 261 20.0 8.4 9.1 282 20.0

8.1 8.7 214 20.0

8.3 9.1 218 20.0

pH 02 ppm Cond. Temp(C)

20

20.0

ELAPSED TIME

TEST CONC.

Sample Number: 03900331

00:00 24:00 48:00

7.8 9.2 133 20.0

pH O2 ppm Cond. Temp(C)

100

8.3 8.7 275 20.0

pH O2 ppm Cond. Temp(C)

13

20.02

8.3 8.5 301 20.0

Control pH 02 ppm Cond. Temp(C)

20.02

8.3 8.7 287 20.0

8.4 9.2 295 20.0

pH 02 ppm Cond. Temp(C)

9

20.0

MISA Daphnia

CONDITIONS		
	: Algoma Steel Sault Ste. Marie, ONT (40006) : Northeast	
Control point		
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab B. Murray 05/07/90 05/09/90 05/09/90 at: 1515	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
	. D. magna	
DATA		
LAPS	SED TIME TOTAL MORTALITY	
00:00 24:00	24:00 48:00	%
000000	00000	00000
48 Hour LC50	: Non-lethal	
limits	% 0.0 - 0.0 :	
	: Non-lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

35	48:00	7.9 8.7 165 19.5	8.2 8.8 234 19.5	8.8 269 19.5	8.3 8.9 286 19.5	8.3 8.8 298 19.5	8.8 306 19.5
_	00:57	19.5	19.5	19.5	19.5	19.5	19.5
14.	00:00	7.9 8.8 161 19.0	8.0 8.7 230 19.0	8.1 8.8 262 19.0	8.1 8.7 282 19.0	8.2 8.7 292 19.0	8.3 8.9 299 19.0
TEST F I A P S		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST	CONC.	100	20	25	13	•	Control

132

Sample Number: 03900	conditions iny try ol point atory ing Method ing				UNICITY TEST PARAMETERS
1					
100 pH 1	 B	w E	ampte l EST	Number: USYU	PSED
thod : #A2 Tube Will, (1800) thod : BAR		5	% CAC.		00:00 54
Second	ethod		100	Ha	7.9
1				02 ppm Cond. Temp(C)	209
STATIC Cophnia magna Acute Lethality Toxicity Cophnia magna Acute Lethality Toxicity Cophnia magna Acute Lethality Toxicity Cond. Test Protocol. OME, 1988) Test Protocol. OME, 1988) Temp(C) Temp(C)	: 05/28/90 : 05/30/90 : 05/31/90 at:		20	pH 02 ppm Cond.	9.1
13 pH 13 pH 14 pH 15 pH 15 pH 15 pH 16 p	**		52	pH 02 ppm	2.8
TOTAL TOTAL TOTAL TOTAL TOTAL Temp(C) Temp			13	Temp(C) pH 02 ppm	8.2
E L A P S E D T I M E MORTALITY	DORTALITY DATA			Cond. Temp(C)	283
00:00 24:00 48:00	ELAPSED TIME		9	02 ppm	8.2 9.0
Control pH 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00:00	>€		Temp(C)	20.5
: Non-lethal : 0.0 - 0.0) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Control		8.3 296 20.5
0.0 - 0.0 :	• •				
	0.0 - 0.0 :				

20.5

20.5

ELAPSED TIME

00:00 24:00 48:00

8.3 20.5 8.3 8.3 20.5 20.5 50.5

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SLOPE of Mortality Curve : LC50 Calculated By :

TEST CONDITIONS		Sample	Sample Number: 02900100	0100
Company : Algom	Algoma Steel Sault Ste. Marie, ONI	TEST	E L A P S	P S
(4000) Region : North	(40006) Northeast Iron and Steel	CONC		00:00
Control point : #2 Tu	#2 Tube Mill, (1800)	100	Нд	7.7
Laboratory : MOE Sampling Method : Grab Sampled By : M. Sn	mithson		02 ppm Cond. Temp(C)	8.5 175 20.0
** **	05/28/90 05/31/90 05/31/90 at: 1400	09	pH 02 ppm cond. Temp(C)	7.8 8.7 230 20.0
Type of Bioassay : STATIC (Daphn Test P	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	30	pH 02 ppm Cond.	7.9 8.7 270
Test Animal : D. mx Weight(gm) : Length(mm) :	D. magna	15	Temp(C) pH 02 ppm	8.08
MORTALITY DATA			Cond. Temp(C)	295
TEST ELAPSED CONC.	T I M E TOTAL MORTALITY	5	PH 02 ppm Cond.	8.8
% 00:00 00:30 01:00	01:00 02:00 24:00 48:00 %		Temp(C)	20.
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000000000000000000000000000000000000	Control	1 pH 02 ppm Cond. Temp(C)	8.0 305 20.0
48 Hour LC50 : >100%	%00			
95% fid. limits : 0.0	% 0.0 - 0.			
Comments : MISA	: MISA Audit			

00:00 00:30 01:00 02:00 24:00 48:00

LAPSED TIME

0.0 0.0 95% fid. limits 48 Hour LC50

Non-lethal

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100 50 25 13 6 Control

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TOTAL MORTALITY

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ELAPSED

TEST CONC. Ж

MORTALITY DATA

00:00 24:00 48:00

: Non lethal Comments

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900543

TOXICITY TEST REPORT

MISA Daphnia

TEST CONDITIONS

Company

			Ì
	W E	48:00	
	D 1	24:00	
Sample Number: 03900543	ELAPSED	00:00 24:00 48:00	
Number:	ш		
Sample	TEST	% %	

: Algoma Steel Sault Ste. Marie, ONT (40006) : Northeast : Iron and Steel

: #2 Tube Mill, (1800)

Control point

Region Industry

7.8 8.5 168 20.5	8.7 234 20.5	8.8 265 20.5	8.8 279 20.5	8.3 8.8 288 20.5	8.4 8.5 297 20.5
20.02	20.02	20.0	20°0	20.0	20.0
7.9 9.1 160 20.5	8.2 9.0 227 20.5	8.3 8.9 259 20.5	8.3 8.9 274 20.5	8.4 8.9 284 20.5	8.4 8.9 293 20.5
pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control

: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)

Type of Bioassay

D. magna

Test Animal Weight(gm) Length(mm)

: BAR : Grab : B. Murray : 06/25/90 : 06/21/90 at: 1110

Laboratory Sampling Method Sampled By Date Collected Received

MISA Daphnia

TEST CONDITIONS		
Company :	Algoma Steel Sault Ste. Marie, ONT (40006) Northeast	TES COU
point :	#2 Tube Hill, (1800)	•
 D D	BAR Grab B. Murray 07/23/90 07/25/90 at: 1440	
Type of Bioassay :	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal : Weight(gm) : Length(mm) :	D. magna	
MORTALITY DATA		
TEST ELAPSE	D TIME TOTAL MORTALITY	
% 00:00 54:00 48:00	8:00	
100 0 1 50 0 1 25 0 0 1 13 0 0 6 control 0 0	22 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Con
48 Hour LC50 :	>100%	1
95% fid. limits :	% 0°0 - 0°0	
Comments	LC50 >100	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

E E	00:8:	7.9 8.3 207 21.0	8.1 8.4 256 21.0	8.1 8.6 280 21.0	8.2 8.7 291 21.0	8.2 8.8 302 21.0	8.3 8.2 302 21.0
1 0	7 :00 7	21.0	21.0	21.0	21.0	21.0	21.0
< <	00:00 24:00 48:00	7.9 9.1 204 21.0	8.1 9.0 260 21.0	8.1 9.0 278 21.0	8.2 9.0 291 21.0	8.2 9.1 298 21.0	8.2 9.1 300 21.0
П		pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	ĸ	100	20	52	13	9	Control

TEST CONDITIONS				
Company Region Industry	: Algoma Steel Sault Ste. Marie, ONT (40006) : Northeast : Iron.and Steel	Sample N TEST CONC.	Sample Number: 02900096 TEST E L A P S CONC. 00:	A P S E
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	: 24 inch Coke Quench, (2000) : MOE : Grab : M. Smithson : 05/28/90 : 05/28/90 at: 1000	100	pH 02 ppm Cond. Temp(C) pH pH	3300
Type of Bioassay Test Animal Weight(gm)	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna	30	Cond. Temp(C) pH 02 ppm Cond. Temp(C)	8.4 320.0 20.0
ATA E L A P	S E.D TIME TOTAL MORTALITY	15	pH 02 ppm Cond. Temp(C) pH 02 ppm	20 48
100 00:00 01:00 60 00 00 00 00 00 00 00 00 00 00 00 0	00:00 01:00 02:00 04:00 24:00 48:00	Cond. Temp(C) Control pH 02 ppm Cond. Temp(C)	Cond. Temp(C) pH 02 ppm Cond. Temp(C)	20. 20. 28. 28. 20.
48 Hour LC50 95% fid. Limits Comments	: 0.0 - 5.0 % : 0.0 - 0.0 % : MISA Audit			

SLOPE of Mortality Curve : LC50 Calculated By :

ELAP	0	pH 02 ppm Cond, Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	DH OZ ppm Cond. Temp(C)	Control pH 02 ppm Cond.
SED TIME	00:00 01:00 02:00 04:00 24:00 48:00	8.2 6.0 330 20.0	8.1 8.0 325 20.0	8.1 8.6 320 20.0	8.0 8.8 315 20.0	7.9 8.9 310 20.0	7.8 8.9 285
	00:85 00:5	7.8 7.4 345 20.0	7.8 8.1 335 20.0	7.9 8.7 335 20.0	7.9 8.7 335 20.0	7.7 8.8 325 20.0	7.6 8.8 305

COMPANY: Atlas Specialty Steel, Welland

(1610005)

SECTOR: Iron and Steel REGION: West Central

SUMMARY

The data for 24 acute lethality trout bioassays conducted on samples collected from the 42" sewer and Intake between November 1989 and October 1990 were submitted by Atlas Specialty Steel.

Ten of the twelve samples collected from the 42" sewer were determined to have been nonlethal to trout. The other two samples produced 96 h LC50s >100 %. An audit sample collected in January 1990 was not lethal to test fish. All twelve intake water samples were determined to have been not lethal to test fish.

42 inch Sewer

03890290 sampled: 11/22/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890380 sampled: 12/20/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

01900003 sampled: 01/16/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: MISA audit sample.

03900068 sampled: 01/24/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900159 sampled: 02/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test--Non-lethal

03900251 sampled: 03/28/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

03900332 sampled: 04/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900420 sampled: 05/30/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: single concentration test; 5% mort. @ 100%

Atlas Specialty Steel (continued)

03900531 sampled: 06/27/90 non-lethal

0.0 - 0.0 % 95% fid. limits:

comments: Single concetration test; non lethal

03900645 sampled: 07/31/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900741 sampled: 08/29/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration test; non-lethal

03900845 sampled: 09/26/90 LC50: >100 %

0.0 - 0.0 % 95% fid. limits:

comments: Single Conc. Test; 5% mort.@ 100% eff. conc.

03900927 sampled: 10/24/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

Waste Acid Plant

North Plant Treatment

CEVAM

Waste Disposal Site

South Water Reclaim

Waste Well

McMaster Sewer Overflow

North Water Reclaim 42

#3 Building

Scale Pit

Rain Gauge

Intake Water

03890291 sampled: 11/22/89 non-lethal

0.0 - 0.0 % 95% fid. limits:

comments: Non lethal

03890381 sampled: 12/20/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

Atlas Specialty Steel (continued)

03900069 sampled: 01/24/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900158 sampled: 02/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test--Non-lethal

03900252 sampled: 03/28/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

03900333 sampled: 04/25/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900421 sampled: 05/30/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non lethal

03900532 sampled: 06/27/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

03900646 sampled: 07/31/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900740 sampled: 08/29/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900846 sampled: 09/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900928 sampled: 10/24/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

Compressors Reclaim

	TOXICITY TEST REPORT	Sample: 03890290
TEST CONDITIONS		
Company :	Atlas Specialty Steel Welland, ONT (1610005) West Central : Iron and Steel	
Control point :	: 42 inch Sewer, (100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab E. Vale 11/22/89 11/23/89 at: 1600	
Type of Bioassay	: STATIC (Protocol to determine the e of liquid effluents to fish.	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	
MORTALITY DATA		
TEST ELAPS CONC.	ED TIME	TOTAL MORTALITY
00:00 07:00 %	24:00 48:00 72:00 96:00	×
Control 0 0 10 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
96 Hour LC50	: Non-lethal	
95% fid. limits	% 0°0 - 0°0 :	
Comments	: Non lethal	

TOXICITY TEST PARAMETERS

Sample Number: 03890290

ELAPSED TIME 00:00 04:00 24:00 48:00 72:00 96:00

TEST CONC.

8.7 9.7 559 14.0	8.6 9.9 541 14.0	8.5 9.8 517 14.0	8.4 9.8 516 14.0	8.2 9.3 506 14.0	8.0 9.3 479 14.0
14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5
7.9 9.2 560 14.5	7.9 8.8 556 14.5	7.9 8.7 543 14.5	7.9 8.6 534 14.5	7.9 8.9 510 14.5	7.9 8.9 480 14.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)
Control	10	20	07	92	100

TOXICITY TEST PARAMETERS

Sample Number: 03890380

ELAPSED

00:00 24:00 48:00 72:00 96:00 I M E

8.2 9.6 349 14.0	8.4 9.2 420 14.0	8.4 8.5 470 14.0	8.4 9.2 507 14.0	8.4 9.1 504 14.0	8.4 8.3 508 14.0	8.5 8.7 547 14.0
14.0	14.0	14.0	14.0	14.0	14.0	14.0
14.0	14.0	14.0	14.0	14.0	14.0	14.0
14.0	14.0	14.0	14.0	14.0	14.0	14.0
8.0 11.1 345 15.0	7.9 10.5 418 15.0	7.9 10.1 469 15.0	7.9 9.7 510 15.0	7.9 9.4 531 15.0	7.9 9.5 550 15.0	7.8 9.1 9.1 570 15.0
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)				
100	9	07	20	10	S	Control

TOXICITY TEST PARAMETERS

Sample: 01900003

TOXICITY TEST REPORT

TEST CONDITIONS		Samole Number:	ber: 01900003					
Сопрапу	: Atlas Specialty Steel Welland, ONI	TEST	LAPSED TIM	ш				
Region Industry	(1610005) : West Central : Iron and Steel	CONC.	00:00 01:10 01:00	3 02:00 04:00 22:10 44:00 74:10 96:0	:10 44	2 00:	:10 9	0:5
Control point	: 42 inch Sewer, (100)	100 Ha		7.4	7.7	7.2	7.6	7.
Laboratory Sampling Method Sampled By	: MOE : grab : Mark Smithson		02 ppm 9.7 Cond. 390 Temp(C) 15.0	9.7 400 15.0	8.2 375 15.0	8.4 365 15.0	10.3 390 14.0	9. 39 14.
Date Collected Received Tested	: 01/16/90 : 01/18/90 : 01/19/90 at: 1430	65 pH 02 02 00 1 e	pH O2 ppm Cond. Temp(C)	7.4 9.7 350 15.0	7.9 9.8 340 15.0	7.7 10.4 320 15.0	7.6 10.3 350 14.0	7. 9. 35
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	40 pH 05 05 05 05 05 05 05 05 05 05 05 05 05	Hd 02 ppm Cond	7.4 9.7 320	9.8	7.6	7.5 10.1 320	7.
Test Animal	: Rainbow trout	166	Temp(C)	15.0		15.0	14.0	14.
Weight(gm) Length(mm)		30 pH	pH 02 ppm Cond.	7.4 9.5 300	7.9 9.8 290	7.5	7.3 9.8 300	30.
MORTALITY DATA		Te	Temp(C)	15.0	15.0	15.0	14.0	14.
TEST . E L A P	SED TIME TOTAL MORTALITY	20 pH	pH 02 ppm Cond.	7.2 9.5 290	7.7 9.7 275	7.4 10.1 275	7.4 10.1 290	26.5
% 00:00 01:	00:00 01:10 01:00 02:00 04:00 22:10 44:00 74:10 96:00 %	Te Te	mp(C)	15.0		15.0	14.0	14.
100 0 0 65 0 0 30 0 0 30 0		10 PH 00 02 00 02 00 02 00 02 00 02	рН 02 ppm Cond. Temp(C)	7.2 9.7 275 15.0	7.8 10.0 240 15.0	7.5 10.2 265 15.0	7.4 10.1 275 14.0	7. 9. 28 14.
		Control	pH 02 ppm Cond. Temp(C)	7.1 9.8 245 15.0	7.9 10.0 260 15.0	7.4 10.4 240 15.0	7.2 10.2 255 14.0	7. 25. 14.
96 Hour LC50	lethal							
95% fid. limits	% 0°0 - 0°0 :							
Comments	: MISA audit sample.							

TOXICITY TEST PARAMETERS

Sample: 03900068

TOXICITY TEST REPORT

00-90		8.1 472 15.0	8.2 10.0 594 15.0	8.3 10.0 513 15.0	8.5 10.1 519 15.0	8.4 10.2 507 15.0	8.4 10.1 522 15.0	8.4 10.0 535 15.0
I M E	00.3	14.5	14.5	14.5	14.5	14.5	14.5	14.5
M E		14.5	14.5	14.5	14.5	14.5	14.5	14.5
		14.5	14.5	14.5	14.5	14.5	14.5	14.5
LAPSED T	00.00	8.1 9.6 468 15.0	8.0 9.5 490 15.0	8.0 9.4 508 15.0	8.0 9.0 524 15.0	7.9 8.9 533 15.0	7.9 8.8 538 15.0	7.9 8.4 541 15.0
E		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	Cond.
TEST CONC.	e	100	59	07	20	10	5	Control

MISA Trout

Sample: 03900159				the acute lethality fish. OME, 1983).			TOTAL MORTALITY	≥ €	0000			n-lethal
TOXICITY TEST REPORT Sam	Atlas Specialty Steel Welland, ONI (161005)	West Central Iron and Steel 42 inch Sewer, (100)	BAR Grab E. Vale 02/28/90 02/28/90 03/01/90 at: 1200	STATIC (Protocol to determine the acu of liquid effluents to fish.	Rainbow trout		ED TIME MOR	48:00 72:00 96:00	0000	Non-lethal	% 0.0 - 0.0	Single Concentration Test Non-lethal
1	ONDITIONS	Region : Industry : Control point :	Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay :	Test Animal :: Weight(gm) :: Length(mm) ::	MORTALITY DATA	TEST ELAPSE CONC.	% 00:00 54:00 %	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	96 Hour LC50	95% fid. limits :	Commente

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	00-34		7.9 9.4 441 14.0	7.9 9.4 447 14.0	8.4 9.6 551 14.0	8.3 9.3 556 14.0
	00	00:04 00:21 00:04	14.0	14.0	14.0	14.0
	I M E	00:0	14.5	14.5	14.5	14.5 14.5 14.0
	_ 6	00:4	14.5	14.5	14.5	14.5
900159	ELAPSED	00:50	7.5 9.2 324 15.0	7.5 9.2 324 15.0	7.9 8.2 544 15.0	7.9 8.2 544 15.0
Sample Number: 03900159	EL		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
Sample N	TEST CONC.	re	100	100	Control	Control

	48:00 0 0 0 0	% 00:00 24:00 % 00:00 24:00 100 0 0 Control 0 0 Control 0 0
		95% fid. limits
% 0.	- 0.0	limits
		.050
	0000	
00		
TOTAL MORTALITY	0 T I M	LAP
		MORTALITY DATA
	Rainbow trout	Test Animal Weight(gm) Length(mm)
to determine the acute lethality effluents to fish. OME, 1983). out	STATIC (Protocol of liquid Rainbow tr	assay ATA
	BAR Grab E. Vale C3,728/90 03/28/90 03/29/90 STATIC (Protocol of liquid Rainbow tr	thod ed essay assay
(100) 1535 etermine uents to	42 inch Se BAR Grab E. Vale 03/28/90 03/29/90 STATIC (Protocol of liquid Rainbow tr	
00) 335 prmine nts to	(1610005) West Centr Iron and S Louch Se BAR Grab E. Vale 03/28/90 03/28/90 03/29/90 STATIC (Protocol of liquid Rainbow tr	
	:00 .0 % tration Test; Non Lethal	48:00 72:00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

TOXICITY TEST PARAMETERS

Sample: 03900251

TOXICITY TEST REPORT

Sample Number: 03900251

	00:96	8.2 9.5 355 15.0	8.1 9.5 351 15.0	8.5 9.9 534 15.0	8.5 9.8 532 15.0
	72:00	14.5	14.5	14.5	14.5
TIME	48:00	15.0	15.0	15.0	15.0 15.0 14.5
	00:57	15.0	15.0	15.0	15.0
LAPSED	00:00 24:00 48:00 72:00 96:00	8.0 9.8 351 15.0	8.0 9.8 351 15.0	7.8 9.2 533 15.0	7.8 9.2 533 15.0
EL		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST	CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900332

TOXICITY TEST REPORT

Company : Atlas Specialty Steel	Sample Number: U59
	TEST E L
Region : West Central Industry : Iron and Steel	*
Control point : 42 inch Sewer, (100)	100 рн
Laboratory : BAR Sampling Method : Grab Sampled By : E. Vale	02 ppm Cond. Temp(C)
Date Collected : 04/25/90 Received : 04/25/90 Tested : 04/26/90 at: 1005	100 pH OZ ppm Cond.
Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	Control pH 02 ppm Cond.
Test Animal : Rainbow trout Weight(gm) : Length(mm) :	Temp(C) Control pH 02 ppm
MORTALITY DATA	Cond. Temp(C)
TEST ELAPSED TIME TOTAL MORTALITY	
% 00:00 24:00 48:00 72:00 96:00 %	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
96 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 %	
Comments : Non lethal; single concentration test	

8.5 9.5 537 15.5

8.0 9.0 564 15.5

15.0 16.0 15.5

8.0 9.3 487 15.5

15.5

15.0 16.0

8.1 477 15.5

8.1 9.2 487 15.5

15.5

15.0 16.0

8.8 477 15.5

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

Number: 03900332

8.5 9.6 546 15.5

8.0 9.0 564 15.5

15.0 16.0 15.5

TOXICITY TEST PARAMETERS

Sample Number: 03900420

00:96	7.9 8.6 425 16.0	7.9 8.7 423 16.0	8.4 9.1 539 16.0	8.4 9.0 539 16.0
I M E 48:00 72:00 96:00	15.5	15.5	15.5	15.0 15.5
T I M E	15.0	15.0	15.0	15.0
D T 24:00	. 15.5	15.5	15.5	15.5
LAPSED T 00:00 24:00	8.2 8.8 419 15.0	8.2 8.8 419 15.0	7.9 8.9 542 15.0	7.9 8.9 542 15.0
ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900531

TOXICITY TEST REPORT

00:96	8.0 9.1 335 16.0	7.9 8.5 332 16.0	8.4 9.2 535 16.0	8.8 8.8 539 16.0
P S E D	15.5	15.5	15.5	15.5
T I M E	15.5	15.5	15.5	15.5
D T 24:00	15.5	15.5	15.5	15.5
L A P S E 00:00	8.6 8.6 325 16.0	8.2 8.6 325 16.0	8.0 9.3 546 16.0	8.0 9.3 546 16.0
ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900645

TOXICITY TEST REPORT

Sample Number: 03900645

8.1 9.6 327 15.5	8.0 9.5 325 15.5	8.4 9.6 537 15.5	8.3 9.4 541 15.5
15.5	15.5	15.5	15.5
15.5 15.0 15.5	15.5 15.0 15.5	15.5 15.0	15.5 15.0 15.5
15.5	15.5	15.5	15.5
8.2 8.9 319 15.5	8.2 8.9 319 15.5	7.9 8.3 534 15.5	7.9 8.3 534 15.5
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
100	100	Control	Control

	TOXICITY TEST REPORT Sample: 03900741	
TEST CONDITIONS		
Сопрапу	Helland ONT	0) F
Region Industry	(Toludus) : West Central : Iron and Steel	0
Control point	: 42 inch Sewer, (100)	1
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : E. Vale : 08/29/90 : 08/29/90 at: 1635	
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	0
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	0
MORTALITY DATA		
TEST ELAPS CONC.	SED TIME TOTAL MORFALITY	
% 00:00 24:00	7 48:00 72:00 96:00	
100 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
96 Hour LC50	: Non-lethal	
95% fid. limits :	% 0.0 - 0.0 :	
Comments :	: Single Concentration test; non-lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

ELAPSED TIME Sample Number: 03900741 TEST CONC.

00:00 24:00 48:00 72:00 96:00

İ				
	7.9 9.3 311 15.0	7.9 9.3 310 15.0	7.8 9.0 332 15.0	7.8 9.0 331 15.0
	15.0	15.0	15.0	15.0
	15.0	15.0	15.0 15.0	15.5 15.0 15.0
	15.5	15.5	15.5	15.5
	8.1 8.2 311 15.0	8.2 311 15.0	7.8 7.6 539 15.0	7.8 7.6 539 15.0
	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
	100	100	Control	Control

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SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900845

	00:96	7.9 9.5 319 15.5	8.0 9.7 321 15.5	8.5 9.8 504 15.5	8.5 9.8 504 15.5
	72:00	15.5	15.5	15.5	15.5
M	48:00	15.0	15.0	15.0	15.0
D T	54:00	15.5	15.5	15.5	15.5
LAPSED	00:00 24:00 48:00 72:00 96:00	8.1 8.6 312 15.0	8.1 8.6 312 15.0	8.0 8.8 536 15.0	8.0 8.8 536 15.0
ш		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST	,	100	100	Control	Control

MISA Trout			SLOPE of Mortality Curve LC50 Calculated By :	ty Curve : By :
	TOXICITY TEST REPORT	Sample: 03900927	TOXICITY TEST PARAMETERS	RAMETERS
TEST CONDITIONS Company Region Industry	Atlas Specialty Steel Welland, ONI (1610005) : West Central : Iron and Steel		Sample Number: 03900927 TEST E L A P S CONC. % 00:	3900927 L A P S E D 00:00 24
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	: 42 inch Sewer, (100) : BAR : Grab : E. Vale : 10/24/90 : 10/24/90		100 pH CONG. CONG. Temp(C) 100 pH OZ ppm CONG.	28.82 45.75 5.82 5.83 5.93 5.93 5.93 5.93 5.93 5.93 5.93 5.9
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). : Rainbow trout	the acute lethality fish. OME, 1983).	Temp(C) Control pH 02 ppm Cond. Temp(C)	7.9 8.5 836 15.5
Weight(gm) Length(mm) MORTALITY DATA			Control pH 02 ppm Cond. Temp(C)	7.9 8.5 536 15.5
TEST E L A P S CONC.	ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	TOTAL MORTALITY %		
100 0 0 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000		
96 Hour LC50 95% fid. limits Comments	: Non-lethal : 0.0 - 0.0 % : Single Concentration Test; non-lethal	st; non-lethal		

7.9 9.0 357 15.0 8.0 9.3 358 15.0

15.0 14.0 14.0

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

8.3 9.2 536 15.0

15.0 14.0 14.0

14.0

14.0

15.0

14.0 14.0

15.0

152

%

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03890291

TOXICITY TEST REPORT

LAPSED TIME 00:00 04:00 24:00 48:00 72:00 96 7.9 9:3 561 14.5 14.5 14.5 14.5 14.5 14.5 1 8.0 9.2 515 14.5 14.5 14.5 14.5 14.5 14.5 1 14.5 14.5 14.5 14.5 1 8.0 9.3 472 14.5 14.5 14.5 14.5 14.5 1 8.0 9.3 472 14.5 14.5 14.5 14.5 14.5 1 8.0 9.3 472 14.5 14.5 14.5 14.5 14.5 1 8.0 9.5 9.5 9.5 9.5 9.5 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6	TEST CONC.	Control	0	20 66	0,	59	001
PSED IIME 00:00 04:00 24:00 48:00 72:00 96 7.9 9.3 14.5 14.5 14.5 14.5 14.5 14.5 1 8.0 9.2 515 14.5 14.5 14.5 14.5 14.5 1 14.5 14.5 14.5 14.5 1 8.0 9.3 4.72 14.5 14.5 14.5 14.5 14.5 1 8.0 9.3 4.72 14.5 14.5 14.5 14.5 14.5 1 8.0 9.3 4.72 14.5 14.5 14.5 14.5 14.5 1 8.0 9.5 9.5 14.5 14.5 14.5 14.5 1 8.1 9.6 9.7 14.5 14.5 14.5 1 8.1 9.6 9.5 14.5 14.5 14.5 1 8.1 9.6 9.6 9.6 9.7 14.5 14.5 14.5 1	_	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
14.5 14.5 14.5 14.5 15.0 95.00 14.00 24:00 48:00 72:00 96:00 96:00 14.5 14.5 14.5 15.0 14.5 15.0 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 14.5 14.5 14.5 15.0 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5	P S E	7.9 9.3 561 14.5	7.9 8.9 538 14.5	8.0 9.2 515 14.5	8.0 9.3 472 14.5	8.0 9.5 414 14.5	8.1 9.6 335 14.5
1 M E 24:00 48:00 72:00 96:00 8.6 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0 14.5 14.5 14.5 15.0	1 00:50	14.5	14.5	14.5	14.5	14.5	14.5
48:00 72:00 96:00 8.6 9.6 9.6 14.5 14.5 15.0 14.5 14.5 15.0	I M E 24:00	14.5	14.5	14.5	14.5	14.5	14.5
72:00 96:00 8.6 14.5 15.0 14.5 15.0 14.5 15.0 14.5 15.0 14.5 15.0 14.5 15.0 14.5 15.0 14.5 15.0 14.5 15.0	48:00	14.5	14.5	14.5	14.5	14.5	14.5
00:96 00:00 00	72:00	14.5	14.5	14.5		14.5	14.5
	00:96	8.6 9.6 568 15.0	8.6 9.7 537 15.0	8.5 9.6 518 15.0	8.6 9.7 475 15.0	8.4 9.7 420 15.0	8.3 9.6 340 15.0

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TOXICITY TEST PARAMETERS

Sample: 03890381

TOXICITY TEST REPORT

TEST CONDITIONS	Samo	Sample Number: 03890381	00381
•	Sallpre	Melloci . cool	000
Company : Atlas Specialty Steel Helland, ONI (1610005)	TEST CONC.	E L /	A P S
Region : West Central Industry : Iron and Steel	*		00:00
Control point : Intake Water, (1100)	100	퓹	ဆိ
		02 ppm Cond. Temp(C)	15.51
Date Collected : 12/20/89 Received : 12/20/89 Tested : 12/21/89 at: 1700	99	DH 02 ppm Cond. Temp(C)	15.01
Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm Cond	9.0
Test Animal : Rainbow trout Weight(gm) : Length(mm) :	20	Temp(C) PH 02 ppm	15.
MORTALITY DATA		Cond. Temp(C)	50 15.
TEST ELAPSED TIME TOTAL CONC. MORTALITY	10	pH 02 ppm	2000
% 00:00 24:00 48:00 72:00 96:00 %		Temp(C)	15.
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5	pH 02 ppm Cond. Temp(C)	533
	Control pH 02 02 02 Co	of pH 02 ppm Cond. Temp(C)	7. 57. 15.
96 Hour LC50 : Non-lethal			
95% fid. limits : 0.0 - 0.0 $\%$			
Comments : Non-lethal			

8.5 9.0 463 14.0

14.0

14.0 14.0

7.9 9.9 457 15.0

8.4 8.8 410 14.0

14.0

14.0

14.0

8.0 10.6 401 15.0

14.0

14.0

14.0

8.1 319 15.0

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

8.5 9.2 506 14.0

14.0

14.0

14.0

7.9 9.7 505 15.0

8.4 9.3 507 14.0

14.0

14.0

14.0

7.9 9.6 523 15.0

8.3 9.3 517 14.0

14.0

14.0

14.0

7.9 9.4 532 15.0

14.0

14.0 14.0

7.8 9.1 570 15.0

TEST CONC.

24

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	00:96	8.1 9.9 330 15.0	8.2 9.8 404 15.0	8.3 9.9 456 15.0	8.2 9.3 500	8.4 9.8 515 15.0	8.4 10.1 523 15.0	8.4 10.1 530 15.0
	72:00 96:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
M E		14.5	14.5	14.5	14.5	14.5	14.5	14.5
1 0	54:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
w	00:00	8.1 10.0 329 15.0	8.0 9.5 406 15.0	7.9 9.1 455 15.0	7.9 9.0 497 15.0	7.9 8.8 517 15.0	7.9 8.8 528 15.0	7.9 8.6 540 15.0
TEST E LAP S		pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)				
TEST	CONC.	100	99	70	20	10	5	Control

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	3	-

TOXICITY TEST PARAMETERS

Sample: 03900158

TOXICITY TEST REPORT

TEST CONDITIONS	Sample Number: 03900158	
Company : Atlas Specialty Steel Welland, ONI	TEST ELAPSE CONC.	ED TIME
Region : West Central Industry : Iron and Steel		00:00 24:00 48:00 72:00 96:00
Control point : Intake Water, (1100)		
70	02 ppm 10.2 Cond. 331 Temp(C) 15.0	2 1 345 0 14.5 14.5 14.0 14.0
Date Collected : 02/28/70 Received : 02/28/90 Tested : 03/01/90 at: 1200	100 pH 8.1 02 ppm 10.2 Cond. 331 Temp(C) 15.0	2 9.6 9.6 14.5 14.0 14.0
Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).		9, 6 7, 8 9, 6 5, 6
_		14.5 14.5 14.0
Length(mm) :	Control pH 7.9 02 ppm 8.1 6.1	
MORTALITY DATA	Temp(C) 15.0	14.5 14.5 14.0
TEST ELAPSED TIME TOTAL CONC.		
% 00:00 24:00 48:00 72:00 96:00 %		
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
96 Hour LC50 : Non-lethal		
95% fid. limits : 0.0 - 0.0 %		
Comments : Single Concentration TestNon-Lethal		

Company

TEST CONC. ×

SLOPE of Mortality Curve : LC50 Calculated By :

00:00 24:00 48:00 72:00 96:00 ELAPSED TIME TEST CONC.

8.1 9.4 351 14.5	8.1 9.3 341 14.5	8.5 8.6 537 14.5	8.4 8.7 543 14.5
14.5 15.0 14.5	14.5 15.0 14.5	15.0 14.5	14.5 15.0 14.5
14.5	14.5	14.5	14.5
8.1 11.0 327 15.0	8.1 11.0 327 15.0	7.9 9.9 539 15.0	7.9 9.9 539 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
00	0	itrol	itrol

	TOXICITY TEST REPORT	Sample: 03900333	TOXICITY TEST PARAMETERS	RAMETERS
TEST CONDITIONS Company Region Industry	: Atlas Specialty Steel Welland ONI (1610005) : West Central : Iron and Steel		Sample Number: 03900333 TEST E L A P S CONC.)3900333 L A P S E D 00:00 24
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	: Intake Water, (1100) : BAR : Grab : E. Vale : 04/25/90 : 04/25/90 : 04/26/90 at: 1010		100 pH Cond. 100 pH 02 ppm Cond. 100 pH 02 ppm Cond.	80 m m m m m m m m m m m m m m m m m m m
Type of Bioassay Test Animal Weight(gm) Length(mm)	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). : Rainbow trout	the acute lethality fish. OME, 1983).	Control pH 02 ppm Cond. Temp(C) Cond.	0.0 8 9 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
MORTALITY DATA TEST E L A P S CONC. 8 00:00 24:00		TOTAL MORTALITY %	Temp(C)	15.5
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0000		
96 Hour LC50 95% fid. limits Comments	: Non-lethal : 0.0 - 0.0 % : Non lethal; single concentration test	entration test		

8.3 9.5 542 15.5

15.5

16.0

15.0

8.3 9.3 551 15.5

16.0 15.5

15.0

7.9 9.0 354 15.5

15.0 16.0 15.5

8.2 9.4 355 15.5

15.0 16.0 15.5

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

TEST CONC. 34

SLOPE of Mortality Curve : LC50 Calculated By :

00:00 24:00 48:00 72:00 96:00	8.3	8.0	8.4	8.4
	8.2	8.2	8.3	8.2
	328	326	539	541
	15.0 15.0 15.5 15.5	15.0 15.0 15.5 15.5	15.0 15.0 15.5 15.5	15.0 15.0 15.5 15.5
00:00	pH 8.2 02 ppm 9.6 Cond. 319 Temp(C) 15.0	02 ppm 9.6 Cond. 319 Temp(C) 15.0	Control pH 7.9 02 ppm 8.7 Cond. 545 Temp(C) 15.0	pH 7.9 02 ppm 8.7 Cond. 545 Temp(C) 15.0

TOXICITY TEST PARAMETERS

Sample: 03900532

TOXICITY TEST REPORT

TEST CONDITIONS	
Company : Atlas Specialty Steel Welland, ONT	
Region : West Central Industry : Iron and Steel	
Control point : Intake Water, (1100)	
Laboratory : BAR Sampling Method : Grab Sampled By : E. Vale Date Collected : 06/27/90 Received : 06/28/90 at: 1050	
Type of Bioassay : STATIC (Protocol to determine the acu of liquid effluents to fish.	the acute lethality fish. OME, 1983).
Test Animal : Rainbow trout Weight(gm) :	
MORTALITY DATA	
TEST ELAPSED TIME MORCONC.	TOTAL MORTALITY
% 00:00 24:00 48:00 72:00 96:00	%
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000
96 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 χ	
Comments : Single concentration test; Non lethal	lethal

8.4 9.6 318 16.0

16.0

16.0

15.5

8.2 9.0 311 16.0

pH O2 ppm Cond. Temp(C)

100

8.4 9.6 317 16.0

15.5 16.0 16.0

8.2 9.0 311 16.0

pH O2 ppm Cond. Temp(C)

100

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

TEST CONC.

Sample Number: 03900532

8.3 8.4 538 16.0

16.0 16.0

15.5

8.0 9.3 541 16.0

Control pH 02 ppm Cond. Temp(C) 8.2 8.4 535 16.0

16.0 16.0

15.5

8.0 9.3 541 16.0

Control pH 02 ppm Cond. Temp(C)

TOXICITY TEST PARAMETERS

8.3 9.8 317 15.5	8.1 9.7 317 15.5	8.4 9.5 537 15.5	8.4 9.7 535 15.5
15.5	15.5	15.5	15.5
15.0	15.0	15.0	15.0
15.5	15.5	15.5	15.5
8.3 9.0 311 15.5	8.3 9.0 311 15.5	7.8 8.3 536 15.5	7.8 8.3 536 15.5
_	- 0	_ ^	_ ^
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
100	100	Control	Control

Sample Number: 03900740

TOXICITY TEST PARAMETERS

Sample: 03900740

TOXICITY TEST REPORT

00:96	8.3 9.2 537 15.0	8.2 9.0 537 15.0	7.8 9.0 332 15.0	7.8 9.0 331 15.0
72:00	15.0 15.0	15.0	15.0	15.0
T I M E		15.0	15.0	15.5 15.0 15.0
0 I 5	15.5	15.5	15.5	15.5
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.0 8.1 327 15.5	8.0 8.1 327 15.5	7.7 7.5 7.5 535 15.5	7.7 7.5 7.5 535 15.5
Ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	o2 ppm Cond. Temp(C)	O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900846

TOXICITY TEST REPORT

TEST CONDITIONS

Sample Number: 03900846 TEST ELAPSED TIME CONC.	% 00:00 24:00 48:00 72:00 96:00		100 pt 8.1 02 ppm 9.1 9.7 cond, 307 312 Temp(C) 15.0 15.5 15.5 15.5	!	8.0 8.8 8.8	15.5 15.0 15.5	Control pH 8.0 8.5	15.5 15.0 15.5							
	Region : West Central Industry : Iron and Steel	Control point : Intake Water, (1100)	Laboratory : BAR Sampling Method : Grab Sampled By : E. Vale Date Collected : 09.26/90		Type of Bioassay : STAIIC (Protocol to determine the acute lethality of Liquid effluents to fish. OME, 1983).		Length(mm) :	MORTALITY DATA	TEST ELAPSED TIME TOTAL CONC. MORTALITY	% 00:00 24:00 48:00 72:00 96:00 %	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	96 Hour LC50 : Non-lethal	95% fid. limits : 0.0 - 0.0 %	Comments : Single Concentration Test; non-lethal	

TEST CONC.

8.3 9.2 536 15.0

14.0

14.0

15.0

7.9 8.5 536 15.5

pH 02 ppm Cond. Temp(C)

8.0 8.9 330 15.0

14.0

14.0

15.0

Temp(C)

8.2 9.6 322 15.5

pH 02 ppm cond.

00:00 24:00 48:00 72:00 96:00

T M E

ELAPSED

8.2 9.5 333 15.0

14.0

14.0

15.0

Temp(C)

8.2 9.6 322 15.5

pH 02 ppm Cond.

8.5 8.4 534 15.0

14.0

14.0

15.0

pH 02 ppm Cond.

Temp(C)

164

COMPANY: Atlas Specialty Steel, Welland

(1610005)

SECTOR: Iron and Steel REGION: West Central

SUMMARY

Data for twenty-two Daphnia magna acute lethality toxicity tests conducted on samples of intake water (1100) and 42 inch sewer (100) effluent collected between November 1989 and September 1990 were submitted by Atlas Specialty Steel of Welland.

Six of eleven samples of intake water were not acutely lethal to Daphnia. Five remaining samples had LC50s > 100%.

Four samples of effluent from the 42 inch sewer were nonlethal, as was a Ministry audit sample collected in January. Two samples had LC50s > 100%. Four samples were toxic to Daphnia with LC50s between 25.5 and 95%.

42 inch Sewer

03890290 sampled: 11/22/89 LC50: 92.8 % 95% fid. limits: 74.2 - 115.8 % slope: 6.4

comments:

03890380 sampled: 12/20/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

02900003 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit/Many floaters in all concentration

03900068 sampled: 01/24/90 LC50: 26.2 % 95% fid. limits: 17.5 - 39.3 % slope: 2.2

comments:

03900159 sampled: 02/28/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900251 sampled: 03/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900332 sampled: 04/25/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900420 sampled: 05/30/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

Atlas Specialty Steel (continued)

03900645 sampled: 07/31/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900741 sampled: 08/29/90 LC50: 50.0 - 100.0 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 Range

03900845 sampled: 09/26/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900927 sampled: 10/24/90 LC50: 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100

Waste Acid Plant

North Plant Treatment

CEVAM

Waste Disposal Site

South Water Reclaim

Waste Well

McMaster Sewer Overflow

North Water Reclaim 42

#3 Building

Scale Pit

Rain Gauge

Intake Water

03890291 sampled: 11/22/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03890381 sampled: 12/20/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

LC50: >100 % 03900069 sampled: 01/24/90

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

Atlas Specialty Steel (continued)

03900158 sampled: 02/28/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900252 sampled: 03/28/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900333 sampled: 04/25/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900421 sampled: 05/30/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900532 sampled: 06/27/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900646 sampled: 07/31/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900740 sampled: 08/29/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900846 sampled: 09/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900928 sampled: 10/24/90 LC50: 55.6 %

95% fid. limits: 36.7 - 84.0 % slope: 2.8

comments:

Compressors Reclaim

	TOXICITY TEST REPORT	Sample: U389U29U
TEST CONDITIONS		
сопрану :	Atlas Specialty Steel	
Region :		
Control point :	42 inch Sewer, (100)	
Laboratory Sampling Method Sampled By Date Collected Received:	BAR Grab E. Vale 11/22/89 11/23/89 at: 1100	
Type of Bioassay :	STATIC (Daphnia magna Acute Test Protocol, OME,	Lethality Toxicity 1988)
Test Animal Weight(gm) : Length(mm)	D. magna	
MORTALITY DATA		
TEST E L A P S CONC.	ED TIME	TOTAL
00:00 04:00	24:00 48:00	> <
Control 0 0 6 13 0 0 0 25 0 0 0 0 100 0 0	0000	0000
48 Hour LC50 :	92.8 %	
95% fid. limits :	74.2 - 115.8 %	
Comments		

SLOPE of Mortality Curve : 6.4 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

			-												
		48:00		8.5 9.1 297 20.0	8.4 9.4 309 20.0	8.3 9.4 322 20.0	8.3 9.4 341 20.0	8.2 9.3 382 20.0	8.1 9.1 465 20.0						
	I M E	24:00 48:00		20.0	20.0	20.0	20.0	20.0	20.0						
	1 0			20.0	20.0	20.0	20.0	20.0	20.0						
3890290	LAPSEI	00:00 04:00		8.5 298 20.0	8.4 8.6 305 20.0	8.4 8.6 352 20.0	8.4 8.6 347 20.0	8.2 8.6 388 20.0	7.9 8.9 475 20.0						
Sample Number: 03890290	ш			L pH 02 ppm Cond. Temp(C)		Sample	TEST	, % %		Control	9	13	25	90	100

MISA Daphnia

COURT TOWN		
Сопрапу	: Atlas Specialty Steel Welland, ONI	
Region Industry	: West Central : Iron and Steel	
Control point	: 42 inch Sewer, (100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab E. Vale 12/20/89 12/20/89 : 12/21/89 at: 1130	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	. D. magna ∶	
MORTALITY DATA		
TEST E L A P CONC.	SED TIME TOTAL MORTALITY	
% 00:00 24:00	00 48:00	ж
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-0000	800000
48 Hour LC50	: >100%	
95% fid. limits	2 0°0 - 0°0 :	
Comments	: LC50 >100%	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03890380

TOXICITY TEST REPORT

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	-	00-87 00-72 00-00
	0	2
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0	S):(
38	α.	5
390	ELAPSED	
38	_	
0	ш	
Sample Number: 03890380		
Sample	TEST CONC.	*

8.2 9.0 347 19.0	8.3 8.9 327 19.0	8.3 8.9 317 19.0	8.8 313 19.0	8.3 8.9 311 19.0	8.3 8.7 310 19.0
19.0	19.0	19.0	19.0	19.0	19.0
8.1 10.2 340 19.0	8.2 9.6 321 19.0	8.2 9.3 312 19.0	8.3 308 19.0	8.4 9.6 307 19.0	8.4 9.6 308 19.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH OZ ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control

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	TOXICITY TEST REPORT S	Sample: 02900003
TEST CONDITIONS		
Company :		
Industry :	Iron and Steel 42 inch Sewer, (100)	
ory g Method By llected ceived sted	MOE Gra Mar 01/	
Type of Bioassay :	STATIC (Daphnia magna Acute Test Protocol, OME,	Lethality Toxicity 1988)
Test Animal	D. magna	
MORTALITY DATA		
TEST ELAPSICONC.	ED TIME	TOTAL MORTALITY
% 00:00 01:00	24:00 48:00	> %
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
48 Hour LC50 :	Non-lethal	
95% fid. limits :	% 0°0 - 0°0	
Comments :	MISA Audit/Many floaters	in all concentration

TOXICITY TEST PARAMETERS

	48:00	7.9 7.7 454 20.0	7.8 7.6 408 20.0	7.9 7.9 358 20.0	7.9 7.9 336 23.0	7.9 7.9 320 20.0	7.8 8.0 325 20.0
	I M E 24:00 48:00	20.02	20.0	20.0	20.0	20.0	20.0
	D T 001:00	20.0	20.0	20°0	20.02	20.0	20.0
900003	A P S E 00:00 (7.6 10.3 476 20.0	7.8 9.6 413 20.0	7.9 9.3 364 20.0	7.9 9.1 337 20.0	8.0 9.1 320 20.0	8.0 9.1 325 20.0
Sample Number: 02900003	П	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	09	30	15	ın	Control

MISA Daphnia

TEST CONDITIONS				
Company Region Industry	** ** **	Atlas Specialty Steel Welland, ONI (1610005) West Central Iron and Steel	steel	
Control point	**	42 inch Sewer, ((100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	** ** ** ** **	BAR Grab E. Vale 01/24/90 01/25/90 at: 1	1100	
Type of Bioassay		STATIC (Daphnia magna A Test Protocol.	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	** ** **	D. magna		
MORTALITY DATA				
TEST ELAP	S	ED TIME	TOTAL	
% 00:00 54:0	7 0	24:00 48:00		*
100 0 5 50 0 0 25 0 0 1 13 0 1 6 0 1 Control 0 0		5 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -		100 75 41 8 16 0
48 Hour LC50	**	26.2 %		
95% fid. limits		17.5 - 39.3	3-୧	
Comments	* *			

SLOPE of Mortality Curve : 2.2 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample: 03900068

TOXICITY TEST REPORT

	I M E	48:00	8.2 8.4 469 20.0	8.4 8.4 382 20.0	8.4 8.4 344 20.0	8.4 8.4 324 20.0	8.4 8.3 311 20.0	8.4 8.3 297 20.0
	DI	7 00:57	20.0	20.0	20.0	20.0	20.0	20.0
890006	APSE	00:00 24:00 48:00	8.1 9.0 466 20.0	8.3 8.9 377 20.0	8.4 8.7 339 20.0	8.4 8.6 321 20.0	8.4 8.6 310 20.0	8.5 8.7 299 20.0
Sample Number: 03900068	E L		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)				
Sample	TEST	**	100	20	25	13	9	Control

TEST CONDITIONS	
Company	: Atlas Specialty Steel Welland, ONT (1610005) : West Central
Control point	: 42 inch Sewer, (100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : E. Vale : 02/28/90 : 02/28/90 : 03/01/90 at: 1050
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	: D. magna
MORTALITY DATA	
TEST E L A P CONC.	SED TIME TOTAL MORTALITY
% 00:00 24:00	00 48:00
100 0 3 50 0 3 25 0 2 13 0 0 6 0 0	5 5 6 0 0 0 1
48 Hour LC50	: >100%
95% fid. limits	% 0.0 - 0.0 :
Comments	: LC50 >100

20.20 20.20

20.0

pH 02 ppm Cond. Temp(C)

13

20.0

pH O2 ppm Cond. Temp(C)

9

pH O2 ppm Cond. Temp(C)

Control

20.0

pH 02 ppm Cond. Temp(C)

25

ELAPSED TIME

TEST CONC.

Sample Number: 03900159

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900159

TOXICITY TEST REPORT

00:00 24:00 48:00

20.02

pH 02 ppm Cond. Temp(C)

100

20.0

pH 02 ppm Cond. Temp(C)

20

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Sample: 03900251						Lethality Toxicity 1988)			TOTAL MORTALITY	34	00000			
TOXICITY TEST REPORT		* Atlas Specialty Steel	: West Central : Iron and Steel	: 42 inch Sewer, (100)	: BAR : Grab : E. Vale : 03/28/90 : 03/28/90 : 03/28/90 at: 1620	: STATIC (Daphnia magna Acute Le Test Protocol. OME, 19	. D. magna		SED TIME	00 48:00	00000	: Non-lethal	: 0.0 - 0.0 :	: Non-lethal
	TEST CONDITIONS	Company	Region Industry	Control point	Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	TEST E L A P CONC.	% 00:00 24:00	100 0 0 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	48 Hour LC50	95% fid. limits	Comments

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	I H E	48:00	8.1 8.6 344 20.0	8.1 8.7 321 20.0	8.2 8.8 311 20.0	8.2 8.7 309 20.0	8.2 8.7 306 20.0	8.2 8.6 304 20.0
	T 0	74:00	20.0	20.02	20.0	20:02	20.02	20.0
3900251	LAPSE	00:00	8.0 9.3 339 20.0	8.0 9.1 320 20.0	8.1 9.0 310 20.0	8.0 9.1 305 20.0	8.0 9.2 302 20.0	8.1 8.9 301 20.0
Number: 03900251	ш		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	re	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 03900332

TOXICITY TEST REPORT

	Samole	Cample Nimber: [150][1557	1332
Company : Atlas Specialty Steel	TEST	ELAPSE	S
Region : West Central Industry : Iron and Steel	, , , , , , , , , , , , , , , , , , ,		00:00
Control point : 42 inch Sewer, (100) Laboratory : BAR Sampling Method : Grab	100	pH 02 ppm Cond. Temp(C)	8.1
ted ed	20	pH O2 ppm Cond.	8.3 391 20.0
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm	9.6
<pre>Test Animal : D. magna Weight(gm) : Length(mm) :</pre>	13	Temp(C) pH 02 ppm	20.02
MORTALITY DATA		Cond. Temp(C)	32
TEST ELAPSED TIME TOTAL CONC. MORTALITY	9	pH 02 ppm	9.5
% 00:00 24:00 48:00 %		Temp(C)	20.
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	Control pH 02 ppm Cond. Cond. Temp(C)	8.4 296 20.0
48 Hour LC50 : >100%			
95% fid. limits : 0.0 - 0.0 %			
Comments : LC50 > 100			

8.2 8.7 382 20.0

8.3 9.1 391 20.0

20.02

ELAPSED TIME

00:00 24:00 48:00

8.1 9.1 474 20.0 20.0 8.8 341 20.0

8.4 9.0 347 20.0

20.02

8.3 8.8 318 20.0

8.4 9.1 326 20.0 20.0 8.3 8.7 305 20.0

8.4 9.2 311 20.0

20.02

20.02

TEST CONC. 3%

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900420

I I M E

DH
ppm pd. pd. pd. pd. pd. pd. pd.
100 100 50 25 13 6

TEST CONDITIONS

Company
Region
Industry
Control point
Con

ioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) at : D. magna

Test Animal : D. magna Weight(gm) : Length(mm) :

MORTALITY DATA

48 Hour LC50 : Non-lethal 95% fid. limits : 0.0 - 0.0

×

Comments : Non-lethal

SLOPE of Mortality Curve : LC50 Calculated By : TOXICITY TEST PARAMETERS

Sample Number: 03900645

1 M E		8.1 8.8 316 20.5	8.2 8.9 310 20.5	8.3 9.0 306 20.5	8.3 9.0 306 20.5	8.3 9.0 307 20.5	8.3 8.9 304 20.5
D T I M E		20.5	20.5	20.5	20.5	20.5	20.5
LAPSEI		8.1 9.0 311 20.0	8.2 9.0 303 20.0	8.3 9.0 301 20.0	8.3 9.0 299 20.0	8.3 9.0 299 20.0	8.4 9.0 302 20.0
ш		pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
CONC.	ę	100	50	25	13	9	Control

177

MISA Daphnia

TEST CONDITIONS		
Сопрапу	: Atlas Specialty Steel	
Region Industry	(1610005) : West Central : Iron and Steel	
Control point	: 42 inch Sewer, (100)	
Laboratory Sampling Method Sampled By Date Collected Received	: BAR : Grab : E. Vale : 08/29/90 : 08/29/90	
Type of Bioassay	: STATIC (Daphnia magna Acute Test Protocol. OME,	Lethality Toxicity 1988)
Test Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
TEST ELAP	SED TIME	TOTAL
% 00:00 54:00	0 48:00	%
100 0 6 50 0 0 25 0 0 0 13 0 0 1 6 0 1	V-1001-	20000000000000000000000000000000000000
48 Hour LC50	: 50.0 - 100.0	88
95% fid. limits	% 0.0 - 0.0 :	
Comments	: LC50 Range	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900741

I M E	48:00	7.9 8.7 322 20.5	8.1 8.9 313 20.5	8.9 309 20.5	8.2 8.9 307 20.5	8.1 8.9 306 20.5	8.1 9.1 303 20.5
D T	24:00 48:00	20.5	20.5	20.5	20.5	20.5	20.5
LAPSE	00:00	7.8 8.5 317 20.5	8.0 3.10 20.5	8.0 8.9 307 20.5	8.0 8.9 307 20.5	8.0 8.9 294 20.5	8.1 8.9 278 20.5
ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	1 pH 02 ppm Cond. Temp(C)
TEST	2	100	50	25	13	9	Control

TEST CONDITIONS		Sample	Sample Number: 03900845
Company Region Industry	: Atlas Specialty Steel Welland, ONI (1610005) : West Central : Iron and Steel	TEST CONC.	E L A P S E 00:00
Control point Laboratory Sampling Method Sampled By	: 42 inch Sewer, (100) : BAR : Grab : E. Vale	100	pH 8.0 02 pcm 8.6 Cond. 307 Temp(C) 19.0
Date Collected Received Tested	: 09/26/90 : 09/26/90 : 09/26/90 at: 1540	20	DH 8.2 02 ppm 8.8 Cond. 303 Temp(C) 19.0
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 8.3 02 ppm 8.8 Cond. 300 Temp(C) 19.0
Weight(gm) Length(mm) MORTALITY DATA		13	pH 8.3 02 ppm 8.9 Cond. 303 Temp(C) 19.0
TEST E L A P S E D CONC.	T I M E TOTAL MORTALITY	⋄	pH 8.4 02 ppm 9.0 Cond. 300 Temp(C) 19.0
100 0 3 50 0 0 25 0 0 0 13 0 0 6 0 0 0	m0000	25 0 0 0 0	of ph 8.4 02 ppm 9.0 Cond. 299 Temp(C) 19.0
48 Hour LC50 95% fid. limits	: >100% : 0.0 - 0.0 %		
Comments	: LC50 >100		

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D TIME 24:00 48:00

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TEST CONDITIONS		
Company Region Industry	Atlas Specialty Steel Welland, ONI (1610005) West Central : Iron and Steel	
Control point	: 42 inch Sewer, (100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab E Vale 10/24/90 10/25/90 at: 1100	
Type of Bioassay :	STATIC (Daphnia magna Acute Test Protocol. OME,	Lethality Toxicity 1988)
	D. magna	
MORTALITY DATA		
TEST ELAPS	ED TIME	TOTAL MORTALITY
% 00:00 24:00	48:00	**
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-00000	80000
48 Hour LC50 :	>100%	
95% fid. limits :	% 0.0 - 0.0 %	
connects		

TOXICITY TEST PARAMETERS

Sample Number: 03900927

1 M E	8.1 9.0 346 20.0	8.3 9.0 326 20.0	8.3 9.0 317 20.0	8.3 9.0 312 20.0	8.4 9.0 311 20.0	8.4 8.9 309 20.0
D T	20°0	20.0	20.0	20.0	20.0	20.0
LAPSED TIME 00:00 24:00 48:00	8.1 9.2 339 20.5	8.3 9.0 319 20.5	8.4 9.0 313 20.5	8.4 8.9 309 20.5	8.4 8.9 308 20.5	8.5 8.9 304 20.5
В	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	50	25	13	9	Control

03890291
Sample:
TEST REPORT
TEST
TOXICITY

TOXICITY TEST PARAMETERS

oint :: Wethod :: ected :: ived :: ioassay :: DATA			
# West Central Intake Water, (1100) BAR Grab Grab E		Weller	
SAR STATIC STATIC STATIC STATIC STATIC SAR S	<i>></i>		
### Grab F. Vale 11/22/89		Intake Water,	
ATA E L A P S E D T I M E O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		BAR Grab E. Vale 11/22/89 11/22/89	
######################################	Bioassay	STATIC (Daphnia magna Acute Test Protocol. OME,	ethality Toxicity 988)
LITY DATA E L A P S E D T I M E MORTALITY 00:00 04:00 24:00 48:00 trol 0			
ELAPSED TIME MORTALITY 00:00 04:00 24:00 48:00	DRIALITY DATA		
ntrol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ELAPS	DIIM	TOTAL MORTALITY
htrol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00:00 04:00	24:00 48:00	₩
: Non-lethal : 0.0 - 0.0	ntrol () () () () () () () () () () () () ()		00000
: 0.0 - 0.0			
•		0.0 - 0.0	
•	Comments	Non-lethal	

8.3 9.2 302 20.0

8.4 8.6 301 20.0

pH O2 ppm Cond. Temp(C)

9

20.0

20.02

20.02

20.02

8.5 8.6 298 20.0

pH 02 ppm Cond. Temp(C)

Control

00:00 04:00 24:00 48:00

ELAPSED TIME

TEST CONC.

Sample Number: 03890291

8.3 9.2 300 20.0

8.4 8.6 305 20.0 20.0 2

pH O2 ppm Cond. Temp(C)

13

20.02

8.3 9.2 302 20.0

8.4 8.6 304 20.0

pH O2 ppm Cond. Temp(C)

25

20.02

20.02

8.3 9.1 309 20.0

20.02

20.02

pH OZ ppm Cond. Temp(C)

20

20.0

20.02

8.2 9.7 325 20.0

pH 02 ppm Cond. Temp(C)

100

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Сопрапу	: Atlas Specialty Steel Welland, ONI	
Region Industry	(1610005) : West Central : Iron and Steel	
Control point	: Intake Water, (1100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : E. Vale : 12/20/89 : 12/20/89 : 12/21/89 at: 1430	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	: D. magna :	
HORTALITY DATA		
TEST E L A P	SED TIME TOTAL MORTALITY	
% 00:00 24:00	0 48:00	*
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	000000
48 Hour LC50	: Non-lethal	
95% fid. limits	% 0.0 - 0.0 :	
Comments	: Non-lethal	

TOXICITY TEST PARAMETERS

Sample: 03890381

TOXICITY TEST REPORT

	I M E	48:00	8.2 8.8 325 19.0	8.3 8.8 317 19.0	8.3 8.8 314 19.0	8.3 8.8 314 19.0	8.4 8.8 316 19.0	8.7 308 19.0
	D T	24:00	19.0	19.0	19.0	19.0	19.0	19.0
03890381	LAPSE	00:00	8.2 10.2 321 19.5	8.3 9.6 310 19.5	8.3 9.3 307 19.5	8.3 9.2 306 19.5	8.3 9.2 306 19.5	8.4 9.6 308 19.5
Sample Number: (ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
Sample	TEST	2	100	20	25	13	9	Control

TEST CONDITIONS		Sample	Sample Number: 03900069	090
Company : Ati	: Atlas Specialty Steel Welland, ONT	TEST	ELAPS	P S E
Region : Wee	(161000>) West Central Iron and Steel		0	00:00
Control point : Int	: Intake Water, (1100)	000		0
Sampling Method : Grab Sampled By : E. N	BAR Grab E. Vale 01/24/00	000	pH O2 ppm Cond. Temp(C)	3233
	01/25/90 at: 1120	20	pH 02 ppm Cond.	908.3
Type of Bioassay : STA (Da	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm	9. 80 80
	D. magna		Cond. Temp(C)	20.
Length(mm) :		13	pH 02 ppm Cond. Temp(C)	8.8 302 302 20.0
CONC.	TIME TOTAL MORTALITY	9	рн 02 ррт	8.89
% 00:00 24:00 48:00	% 00		Cond. Temp(C)	20.
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	∞ c ∞ c ∞ ∞	Control	pH O2 ppm Cond. Temp(C)	8.5 8.7 299 20.0 20.0
48 Hour LC50 : >1	>100%			
95% fid. limits : 0 Comments : 1C5	: 0.0 - 0.0 %			

8.4 312 20.0 20.0 307 20.0 20.0 20.0

8.4 8.9 305 20.0 20.0

20.0

8.3 9.3 308 20.0

00:00 24:00 48:00

20.02

8.2 9.3 323 20.0

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900069

TOXICITY TEST REPORT

8.4 8.6 305 20.0

8.5 8.8 301 20.0

20.02

20.0

20.02

8.5 8.8 302 20.0

В
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SNOITIONS		
	Atlas Specialty Steel Welland ONT (1610005)	
,	West Central Iron and Steel	
Control point : 1	Intake Water, (1100)	
Laboratory : B Sampling Method : G Sampled By : E Date Collected : O Received : O Tested : O	BAR Grab E. Vale 02/28/90 03/28/90 03/01/90 at: 1020	
Type of Bioassay : S	STATIC (Daphnia magna Acute Let Test Protocol. OME, 198	Lethality Toxicity 1988)
Test Animal : D Weight(gm) : Length(mm) :	D. magna	
MORTALITY DATA		
TEST ELAPSEI	D TIME	TOTAL MORTALITY
x 00:00 24:00 48	48:00	34
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00-00	00800
48 Hour LC50 :	>100%	
95% fid. limits :	% 0.0 - 0.0	
Comments : L	LC50 >100	

TOXICITY TEST PARAMETERS

Sample Number: 03900158

1 M E	8.3 8.8 327 20.5	8.4 8.7 314 20.5	8.8 308 20.5	8.5 8.7 306 20.5	8.5 8.7 304 20.5	8.5 8.9 303 20.5
D T	20.0	20.0	20.0	20.0	20.0	20.0
L A P S E 00:00	8.1 8.9 330 20.0	8.3 8.8 318 20.0	8.8 3.11 20.0	8.5 8.8 308 20.0	8.5 8.8 306 20.0	8.5 8.8 300 20.0
ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
TEST CONC.	100	50	25	13	9	Control

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SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900252

TOXICITY TEST REPORT

TEST CONDITIONS		Sample	Sample Number: 03900252	1252		
Сопрапу	: Atlas Specialty Steel Welland ONT	TEST CONC.	ELA	PSE	1 0	M H
Region Industry	: West Central : Iron and Steel	*		00:00 24:00 48:00	54:00	48:00
Control point	: Intake Water, (1100)	100	Hd	8.1		8.1
Laboratory Sampling Method Sampled By	: BAR : Grab : E. Vale		02 ppm Cond. Temp(C)	9.2 330 19.5	20.0	333 20.0
Date Collected Received Tested	: 03/28/90 : 03/28/90 : 03/28/90 at: 1630	20	pH 02 ppm Cond. Temp(C)	9.15 3.15 7.50		8.2
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm	80°.0		8.8
Test Animal Weight(gm)	: D. magna	13	Temp(C)	19.5	20.0	20.0
MORTALITY DATA			02 ppm Cond. Temp(C)	9.1 305 19.5	20.0	8.8 309 20.0
CONC.	SED TIME TOTAL MORTALITY	9	pH 02 ppm Cond	9.1		8.2 306
% 00:00 24:00	00 48:00		Temp(C)	19.5	20.0	20.0
100 0 50 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0	0000	Control	of pH O2 ppm Cond. Temp(C)	8.91 301 19.5	20.0	8.7 8.7 294 20.0
48 Hour LC50	: Non-lethal					
95% fid. limits	% 0.0 - 0.0 :					
Comments	: Non-lethal					

TOXICITY TEST PARAMETERS

Sample Number: 03900333

1 M E	8.2	8.3	8.3	8.3	8.3	8.3
	8.9	8.8	8.7	8.7	8.7	8.6
	343	322	312	306	304	301
	20.0	20.0	20.0	20.0	20.0	20.0
D T I M E 24:00 48:00	20.0	20.0	20.0	20.0	20.0	20.0
L A P S E 00:00	8.3	8.4	8.4	8.5	8.4	8.4
	9.1	9.1	9.2	9.2	9.2	8.7
	342	322	314	310	309	298
	20.0	20.0	20.0	20.0	20.0	20.0
ш	pH	pH	pH	pH	pH	L pH
	02 ppm	02 ppm	02 ppm	02 ppm	O2 ppm	02 ppm
	Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
TEST CONC.	100	20	25	13	%	Control

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TOXICITY TEST PARAMETERS

Sample: 03900421

TOXICITY TEST REPORT

TEST CONDITIONS		Sample N	Sample Number: 03900421	1421		
Company	: Atlas Specialty Steel Welland, ONI (16,10005)	TEST CONC.	ELA	P S E D	-	T E
Region Industry	: West Central : Iron and Steel	34		00:00 24:00 48:00	7:00	00:85
Control point	: Intake Water, (1100)	100	Hd	8.3		80 0
Laboratory Sampling Method Sampled By	: BAR : Grab : E. Vale		Cond.	314	20.5	314
Date Collected Received Tested	: 05/30/90 : 05/30/90 : 05/30/90 at: 1545	20	pH 02 ppm cond. Temp(C)	8.3 303 19.5	20.5	8.5 303 20.5
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH O2 ppm Cond.	8.4 9.1 297		8.2 8.6 298
Test Animal Weight(qm)	: D. magna		Temp(C)	19.5	20.5	20.
Length(mm) MORTALITY DATA		13	pH O2 ppm Cond. Temp(C)	8.4 9.1 294 19.5	20.5	8.7 296 20.5
TEST E L A P	SED TIME TOTAL MORTALITY	9	pH 02 ppm Cond	9.1		8.7
% 00:00 54:00	2 00 48:00		Temp(C)	19.5	20.5	20
700 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	Control	pH O2 ppm Cond. Temp(C)	8.3 9.0 298 19.5	20.5	8.1 29.0 20.5 20.5
48 Hour LC50	: Non-lethai					
95% fid. limits	3 0.0 - 0.0 :					
Comments	: Non-lethal					

TOXICITY TEST PARAMETERS

Sample Number: 03900532

1 M E	8.0 8.4 310 20.5	8.1 8.6 301 20.5	8.2 8.6 297 20.5	8.2 8.7 296 20.5	8.2 8.7 295 20.5	8.2 8.9 295 20.5
P S E D T I M E 00:00 24:00 48:00	21.0	21.0	21.0	21.0	21.0	21.0
LAPSE 00:00	8.0 9.1 308 20.5	7.9 9.1 300 20.5	7.9 9.1 294 20.5	7.9 9.0 291	7.9 8.9 295 20.5	8.0 9.0 294 20.5
ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	20	25	13	9	Control

TEST CONDITIONS			
Company Region	: Atlas Specialty Steel Welland, ONI (1610005) : West Central		San TES CON
Control point			1
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : E. Vale : 07/31/90 : 07/31/90 : 08/01/90 at: 1250		
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	ty Toxicity	
Test Animal Weight(gm) Length(mm)	: D. magna		
MORTALITY DATA			
TEST ELAP CONC.	SED TIME	TOTAL MORTALITY	
% 00:00 24:00 48:00	00 48:00	3-6	
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-0000	#	Con
48 Hour LC50	: >100%		
95% fid. limits	% 0°0 - 0°0 :		
Comments	: LC50 >100		

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	I M E	48:00	8.1 9.0 306 20.5	8.2 9.0 299 20.5	8.3 8.9 297 20.5	8.3 8.9 297 20.5	8.3 8.9 296 20.5	8.3 9.0 298 20.5
	1 0	24:00 48:00	20.5	20.5	20.5	20.5	20.5	20.5
3900646	LAPSE	00:00	8.2 9.0 302 20.0	8.2 9.0 299 20.0	8.2 9.0 298 20.0	8.3 9.0 298 20.0	8.3 9.0 298 20.0	8.4 9.0 302 20.0
Sample Number: 03900646	ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST	, K	100	20	52	13	9	Control

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	H E	78:00	7.9 8.7 302 20.5	8.8 304 20.5	8.1 8.9 304 20.5	8.1 8.9 304 20.5	8.2 9.0 307 20.5	8.1 9.1 304 20.5
	D T	24:00	20.5	20.5	20.5	20.5	20.5	20.5
3900740	LAPSE	00:00 24:00 48:00	8.0 8.8 296 296 20.5	8.0 298 20.5	8.0 8.9 288 20.5	8.9 302 20.5	8.1 8.9 284 20.5	8.1 8.9 278 20.5
Sample Number: 03900740	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST	**	100	50	25	13	9	Control

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SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900846

TOXICITY TEST REPORT

TEST CONDITIONS		20 sacretarity of Jennes
Сопрапу	: Atlas Specialty Steel Welland, ONT	TEST E L
Region Industry	: West Central : Iron and Steel	
Control point	: Intake Water, (1100)	100
Laboratory Sampling Method Sampled By	BAR Grab E. Vale	Cond. Cond. Temp(C)
Date Collected Received Tested	: 09/26/90 : 09/26/90 at: 1550	50 pH 02 ppm Cond. Temp(C)
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25 pH 02 ppm
Test Animal Weight(gm)	: D. magna	
Length(mm) MORTALITY DATA	••	13 pH 02 ppm Cond. Temp(C)
TEST ELAPS	SED TIME TOTAL MORTALITY	6 pH 02 ppm
% 00:00 24:00 48:00	0 48:00	Temp(C)
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control pH 02 ppm Cond. Temp(C)
48 Hour LC50	: Non-lethal	
95% fid. limits	% 0°0 - 0°0 :	
Comments	: Non-lethal	

8.2 302 20.0 20.0 9.2 302 20.0

20.5

20.5

20.5

86.2 90.2 90.2 90.2 90.0 19.0

ELAPSED TIME

mber: 03900846

00:00 24:00 48:00

8.3 302 20.0 20.0 8.3 9.1 300 20.0

20.5

8.2 9.1 300 20.0

20.5

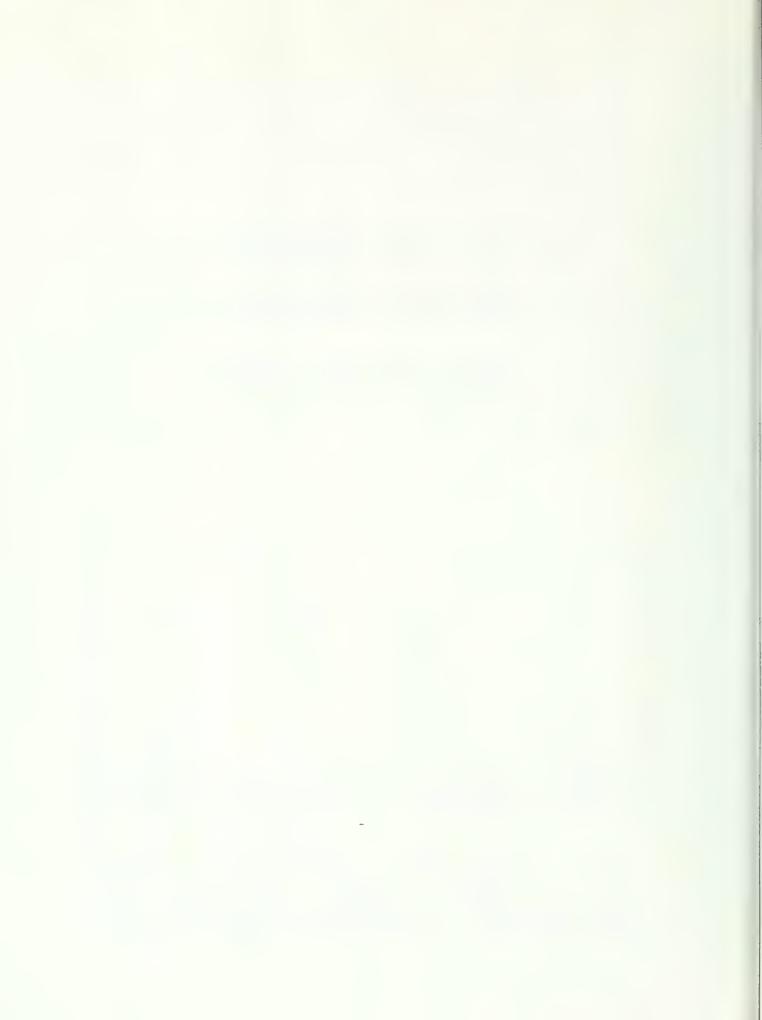
20.5

	TOXICITY TEST REPORT	Sample: 03900928	TOXICI	TOXICITY TEST PARAMETERS	ETERS
TEST CONDITIONS					
Company	Atlas Specialty Steel		Sample	Sample Number: 03900928 TEST ELAPS	0928 P S E
Region	(1610005) : West Central : Iron and Steel		CONC.		00:00
Control point	: Intake Water, (1100)				
Laboratory Sampling Method Sampled By Date Collected	: BAR : Grab : E. Vale		00	ph 02 ppm Cond. Temp(C)	20.5
			20	pH 02 ppm Cond.	8.3 9.1 308
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	hality Toxicity 8)	25	Temp(C) pH 02 ppm	20.5
Test Animal Weight(gm)	. D. magna		!	Cond. Temp(C)	20.5
ATA			13	pH O2 ppm Cond. Temp(C)	8.8 305 20.5
TEST ELAPS CONC.	ED TIME	TOTAL	9	pH 02 ppm	8.4
% 00:00 24:00 48:00	48:00	₩		Cond. Temp(C)	307
100 0 11 50 0 1 25 0 3 13 0 0 6 0 0 Control 0 0	12 3 0 0 0	100 8 25 0 0	Control	pH 02 ppm cond. Temp(C)	8.9 304 20.5
48 Hour LC50	: 55.6 %				
95% fid. limits :	: 36.7 - 84.0 %				
Comments					

SLOPE of Mortality Curve : 2.8 LC50 Calculated By : Probit

CITY TEST PARAMETERS

8.2 9.0 317 20.0	8.2 9.0 312 20.0	8.3 9.0 310 20.0	8.4 9.0 308 20.0	8.4 9.0 308 20.0	8.3 8.8 304 20.0
20.0	20.0	20.0	20.0	20.0	20.0
8.1 9.1 313 20.5	8.3 9.1 308 20.5	8.4 9.0 306 20.5	8.4 8.9 305 20.5	8.4 9.0 304 20.5	8.5 304 20.5
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control
	pH 8.1 02 ppm 9.1 cond. 313 Temp(C) 20.5 20.0	pH 02 ppm 9.1 cond. 313 Temp(C) 20.5 20.0 ppm 9.1 cond. 313 cond. 308 Temp(C) 20.5 20.0	pH 02 ppm 9.1 cond. 313 Temp(C) 20.5 20.0 ppm 9.1 cond. 308 Temp(C) 20.5 20.0 ppH 8.4 02 ppm 9.0 cond. 308 Temp(C) 20.5 20.0 Temp(C) 20.5 20.0 cond.	pH 02 ppm 9.1 cond. 313 Temp(C) 20.5 20.0 ppm 9.1 cond. 20.5 20.0 ppm 9.1 cond. 308 Temp(C) 20.5 20.0 ppH 8.4 02 ppm 9.0 cond. 20.5 20.0 ppH 8.4 02 ppm 8.9 cond. Temp(C) 20.5 20.0 Temp(C) 20.5 20.0 Temp(C) 20.5 20.0	pH 02 ppm 9.1 cond. 313 Lemp(C) 20.5 20.0 ppH 9.1 cond. 308 Lemp(C) 20.5 20.0 ppH 9.1 cond. 308 Lemp(C) 20.5 20.0 ppH 8.4 cond. 305 Lemp(C) 20.5 20.0 ppH 9.0 cond. 305 Lemp(C) 20.5 20.0



Dofasco, Hamilton COMPANY:

(1460005)

SECTOR: Iron and Stee REGION: West Central Iron and Steel

SUMMARY

The data for 58 acute lethality trout bioassays conducted on samples collected from six discharge locations between November 1989 and October 1990 were submitted by Dofasco. Dofasco voluntarily submitted data for toxicity tests conducted on samples of intake water (500). All samples were nonlethal to trout except for the November sample where the 96 h LC50 was 72.7 %.

All twelve samples collected from the East Boat Slip Sewer were not acutely lethal to trout. All thirteen samples collected from the Ottawa Street Sewer were determined nonlethal. Three of four Boiler House Sewer #1 effluents were nonlethal while the fourth produced a 96 h LC50 > 100 %. All four Boiler House #2 effluent samples were determined to have been nonlethal to test fish. Eleven of thirteen samples of West Bay Front Sewer effluent were not lethal to fish while the remaining two were lethal. 96 h LC50s were 51 % and 80.6 %. Seven samples collected for audit testing by the Ministry from the the East Boat Sewer, Ottawa Street Sewer, Boiler House #1, West Bay Front Sewer and Boiler House # 2 were tested and determined to have been nonlethal to test fish.

East Boat Slip Sewer

03890285 sampled: 11/21/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890329 sampled: 12/12/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03900061 sampled: 01/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

900123 sampled: 02/20/90 non-lethal 95% fid. limits: 0.0 - 0.0 % 03900123 sampled: 02/20/90

comments: Single Concentration Test--Non-lethal

03900206 sampled: 03/19/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non-lethal

Dofasco (continued)

03900302 sampled: 04/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900388 sampled: 05/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

01900109 sampled: 06/13/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900493 sampled: 06/18/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900619 sampled: 07/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900706 sampled: 08/20/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900815 sampled: 09/17/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900917 sampled: 10/22/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

Ottawa Street Sewer

03890284 sampled: 11/21/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890332 sampled: 12/12/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03890333 sampled: 12/12/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900057 sampled: 01/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900124 sampled: 02/20/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test--Non-lethal

03900207 sampled: 03/19/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non-lethal

03900301 sampled: 04/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900389 sampled: 05/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

01900107 sampled: 06/12/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900494 sampled: 06/18/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900620 sampled: 07/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900707 sampled: 08/20/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: Single Conc. Test; 10% mort. @ 100% eff. conc

03900816 sampled: 09/17/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900918 sampled: 10/22/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

Boiler House Sewer #1

03900058 sampled: 01/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900300 sampled: 04/16/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: non lethal

01900111 sampled: 06/13/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit; Non-lethal

01900130 sampled: 06/26/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900621 sampled: 07/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900919 sampled: 10/22/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

West Bay Front Sewer

03890283 sampled: 11/21/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890330 sampled: 12/12/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900056 sampled: 01/23/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900125 sampled: 02/20/90 LC50: 51.0 %

95% fid. limits: 40.0 - 65.0 %

comments:

03900208 sampled: 03/19/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900299 sampled: 04/16/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

03900390 sampled: 05/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

01900112 sampled: 06/13/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit; Non-lethal

03900495 sampled: 06/18/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900622 sampled: 07/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900708 sampled: 08/20/90 LC50: 80.6 %

95% fid. limits: 65.0 - 100.0 %

comments:

03900920 sampled: 10/22/90 LC50: 65.0 - 100.0 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 Range 65.00 - 100.00

Bay Water Intake

03890282 sampled: 11/21/89 LC50: 72.7 % 95% fid. limits: 60.6 - 87.1 % slope: 8.1

comments:

03890331 sampled: 12/12/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900059 sampled: 01/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900126 sampled: 02/20/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900205 sampled: 03/19/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non-lethal

03900298 sampled: 04/16/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900391 sampled: 05/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900496 sampled: 06/18/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900623 sampled: 07/23/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900709 sampled: 08/20/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900818 sampled: 09/17/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900921 sampled: 10/22/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

Coke Plant Bio Disch

Blast Furnace Blwdwn

Steel Clarifier Disch

Cold Mill Sewer

#1 Hot Mill Discharge

Boiler House Sewer #2

03900060 sampled: 01/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900303 sampled: 04/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: non lethal

01900110 sampled: 06/13/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900624 sampled: 07/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900922 sampled: 10/22/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

SE Coal Fields Sewer

Kenilworth

Rain Gauge

TEST CONDITIONS			
Сопрвпу	: Dofasco Hamilton,	ONT	
Region Industry	(1460005) : West Central : Iron and Ste	rral Steel	
Control point	: East Boat	Slip Sewer,	er, (100)
Leboratory Sampling Method Sampled By Date Collected Received Tested	Grab S. Ha 11/21/89 11/23/89	at: 1330	
Type of Bioassay	: STATIC (Protocol of Liquid e	to determine effluents to	nine the acute lethality s to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout	out	
MORTALITY DATA			
TEST E L A P S CONC.	ED TIM	ш	TOTAL MORTALITY
x 00:00 04:00	04:00 24:00 48:00	72:00 96:00	2:00
Control 0 0 10 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	00000
96 Hour LC50	: Non-lethal		
95% fid. limits	- 0.0 :	0.0	

TOXICITY TEST PARAMETERS

		00	W/00	N800	M-120	0000	080	0231					
		0:96	8.5 9.7 560 14.0	8.5 9.8 540 14.0	8.3 9.1 575 14.0	8.2 8.9 583 14.0	8.2 9.0 588 14.0	8.1 9.3 602 14.0					
		72:00	14.5	14.5	14.5	14.5	14.5	14.5					
		24:00 48:00 72:00 96:00	14.5	14.5	14.5	14.5	14.5	14.5					
	M M	24:00	14.5	14.5	14.5	14.5	14.5	14.5					
	D T	04:00	14.0	14.0	14.0	14.0	14.0	14.0					
3890285	LAPSE	00:00 04:00	7.9 9.3 566 14.0	7.9 9.3 568 14.0	7.9 9.3 569 14.0	7.9 9.3 578 14.0	8.0 9.3 585 14.0	8.0 9.3 594 14.0					
Sample Number: 03890285	В		1 pH 02 ppm cond. Temp(C)		Sample	TEST	×	Control	10	20	70	92	100

TOXICITY TEST PARAMETERS

	00:96	8.0 9.2 626 14.5	8.4 9.6 603 14.5	8.4 9.5 590 14.5	8.4 9.5 573 14.5	8.5 9.6 565 14.5	8.5 9.8 561 14.5	8.6 9.5 543 14.5
	48:00 72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
HE	48:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
1 0	24:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
LAPSE	00:00	8.0 10.4 625 14.5	7.9 9.8 601 14.5	7.9 9.5 586 14.5	7.9 9.2 573 14.5	7.9 8.9 566 14.5	7.8 8.9 565 14.5	7.8 8.4 560 14.5
Ш		pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp([)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	L pH O2 ppm Cond. Temp(C)
TEST	2	100	99	70	20	10	2	Control

	TOXICITY TEST REPORT	Sample: 03900061	TOXICII	TOXICITY TEST PARAMETERS	ETERS				
TEST CONDITIONS			Sample	Sample Number: 03900061	1061				
Company	: Dofasco Hamilton, ONT		TEST	ELA	ELAPSED	1 1	æ.		
Region Industry	: West Central : Iron and Steel		2		00:00	00:00 24:00 48:00 72:00 96:00	3:00 7	2:00 %	00:
Control point	: East Boat Stip Sewer, (100)	(00)	-	n	0				
Laboratory Sampling Method Sampled By			8	Dr 02 ppm Cond. Temp(C)	9.8 671 15.0	14.5	14.5	14.5	9.0 682 14.5
Received Tested	: 01/23/90 at: 1600		99	pH OZ ppm Cond.	8.0 9.4 522	7. R	7,	× ×	8.8 8.8 627
Type of Bioassay	: STATIC (Protocol to determine t of liquid effluents to f	to determine the acute lethality effluents to fish. OME, 1983).	07	pH 02 ppm	8.0				4.0
Test Animal	: Rainbow trout			Temp(C)	15.0	14.5	14.5	14.5	4.5
Length(mm)	• ••		20	pH 02 ppm	9.0				8.8
MORTALITY DATA				Temp(C)	15.0	14.5	14.5	14.5	4.5
TEST E L A P	SED TIME	TOTAL MORTALITY	10	pH 02 ppm	8.0				9.5
x 00:00 24:0	00:00 24:00 48:00 72:00 96:00	×		Temp(C)	15.0	14.5	14.5	14.5	4.5
100 65 65 00 040 00 00 00 00 00 00 00 00 00 00 00	00000	0000	50	pH O2 ppm Cond. Temp(C)	8.0 8.7 550 15.0	14.5	14.5	14.5	8.8 541 7.5
	000	000	Control	1 pH 02 ppm Cond. Temp(C)	8.0 9.0 544 15.0	14.5	14.5	14.5	8.5 8.2 544 14.5
96 Hour LC50	: Non-lethal								
95% fid. limits	* 0.0 - 0.0 :								
Comments	: Non-lethal								

TEST CONDITIONS		
Company Region Industry	: Dofasco Hamilton, ONT (146005) : West Central : Iron and Steel	
Control point	: East Boat Slip Sewer,	(100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Ha : 02/20/90 : 02/20/90 : 02/21/90 at: 1100	
Type of Bioassay	: STATIC (Protocol to determine of liquid effluents to	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout	
MORTALITY DATA	SED TIME	TOTAL
00:00	24:00 48:00 72:00 96:00	MOK ALL I
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000
96 Hour LC50	: Non-lethal	
95% fid. limits	× 0.0 - 0.0 :	
Comments	. Single Contentration Test Non- lethel	PotMon-[Pths]

TOXICITY TEST PARAMETERS

Sample Number: 03900123

00:96	8.2 9.9 745 14.0	8.0 9.6 748 14.0	8.4 9.8 541 14.0	8.4 9.6 527 14.0
P S E D T I M E 00:00 24:00 48:00 72:00 96:00	14.5	14.5	14.5	14.5
T I M E	14.5	14.5	14.5	14.0 14.5 14.5
D T 24:00	14.0	14.0	14.0	14.0
LAPSED 00:00 24:	8.2 9.9 744 15.0	8.2 9.9 744 15.0	7.9 8.6 545 15.0	7.9 8.6 545 15.0
w	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
CONC.	100	100	Control	Control

												1		
Sample: 03900206				(100)		the acute lethality fish. OME, 1983).			TOTAL MORTALITY	×	0000			t; non-lethal
TOXICITY TEST REPORT		Dofas Hamil (1460	: West Central : Iron and Steel	: East Boat Slip Sewer, (: BAR : Grab : D. Spong : 03/19/90 : 03/20/90 : 03/20/90 at: 1430	: STATIC (Protocol to determine to for liquid effluents to f	: Rainbow trout		SED TIME	00 48:00 72:00 96:00	0000	: Non-lethal	x 0.0 - 0.0 :	: Single concentration test; non-lethal
	TEST CONDITIONS	Company	Region Industry	Control point	Laboratory Sampling Method Sampled By Date Collected Received	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	TEST E L A P CONC.	x 00:00 54:00	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	96 Hour LC50	95% fid. limits	Comments

TOXICITY TEST PARAMETERS

	00:96	8.2 10.3 769 14.0	8.2 10.1 766 14.0	8.4 10.1 530 14.0	8.5 10.0 527 14.0
	72:00	14.0	14.0	14.0	14.0
I M E	48:00	14.5	14.5	14.5	14.0 14.5 14.0
	24:00	14.0	14.0	14.0	14.0
APSE	00:00	8.2 9.8 769 14.0	8.2 9.8 769 14.0	7.9 8.2 549 15.0	7.9 8.2 549 15.0
EL		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
TEST	≥	100	100	Control	Control
	TEST ELAPSED TIME	0: 5	ELAPSED TIME 00:00 24:00 48:00 72:00 9 02 ppm 02 ppm 02 ppm 769 Temp(C) 14.0 14.5 14.0	ELAPSED TIME 00:00 24:00 48:00 72:00 9 PH	ELAPSED TIME 00:00 24:00 48:00 72:00 9 DH 8.2 Cond, 769 Temp(C) 14.0 14.5 14.0 DH 8.2 Cond, 769 Temp(C) 14.0 14.5 14.0 Jt pH 7.9 Cond, 769 Cond, 769 Temp(C) 14.0 14.5 14.0 Temp(C) 15.0 14.5 14.0

TOXICITY TEST PARAMETERS

00:00 24:00 48:00 72:00 96:00 ELAPSED TIME Sample Number: 03900302

8.1 9.2 774 15.5	8.1 9.4 775 15.5	8.2 8.9 549 15.5	8.4 9.4 544 15.5
14.5	14.5	14.5	14.5
14.0 14.0 14.5	14.0 14.0 14.5	14.0 14.0 14.5	14.0 14.0 14.5
14.0	14.0	14.0	14.0
8.1 10.2 752 15.0	8.1 10.2 752 15.0	7.9 9.0 540 15.0	7.9 9.0 540 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
00	00	introl	introl

TEST CONDITIONS								
Company		Dofasco Hamilton, (1460005)		TNO				
kegion Industry		Iron an	o p	central and Steel	_			
Control point	••	East Bo	at	Sti	East Boat Slip Sewer, (100)	(100)		
Laboratory Sampling Method Sampled By Date Collected Received Tested	** ** ** ** ** **	BAR Grab D. Spong 05/14/90 05/15/90	B000	at:	935			
Type of Bioassay	• •	STATIC (Protocol of liquid	log	to	VIIC otocol to determine liquid effluents to		the acute lethality fish. OME, 1983).	ality 83).
Test Animal Weight(gm) Length(mm)	** ** **	Rainbow trout	t	out				
HORTALITY DATA								
CONC.	S	E D T	I	ш			TOTAL MORTALITY	
x 00:00 24:00		48:00 72:00	:00		00:96			ж
100 0 100 Control 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0000	0000		0000			0000
96 Hour LC50	**	Non-lethal	tha					
95% fid. limits	**	0.0	•	0	0.0			
Comments	9.4	Non lethal;	hal		ingle co	ncentr	single concentration test	

TOXICITY TEST PARAMETERS

Sample: 03900388

TOXICITY TEST REPORT

Sample Number: 03900388

	00:96	8.0 9.0 741 15.0	8.0 7.38 15.0	8.4 9.6 548 15.0	8.4 9.5 15.0
	00:00 24:00 48:00 72:00 96:00	14.5 14.0	14.0	14.0	14.0
TIME	48:00	14.5	14.5	14.5	15.0 14.5 14.0
	24:00	15.0	15.0	15.0	15.0
LAPSED	00:00	8.3 740 16.0	8.3 740 16.0	7.9 9.1 549 16.0	7.9 9.1 549 16.0
ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	t pH 02 ppm cond. Temp(C)	L pH O2 ppm Cond. Temp(C)
TEST		100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 01900109

TOXICITY TEST REPORT

TEST CONDITIONS

7.9 9.3 410 15.0 8.0 9.3 15.0 7.9 9.2 365 15.0 7.9 9.3 335 15.0 7.9 9.3 300 15.0 7.7 9.2 270 270 15.0 00:00 00:30 01:00 02:00 24:00 48:00 72:00 96:00 7.7 8.6 410 15.0 7.8 8.7 375 15.0 7.9 8.7 345 15.0 7.8 8.7 310 15.0 8.7 275 275 15.0 7.8 9.6 500 15.0 7.8 9.6 445 15.0 7.9 9.6 470 15.0 7.8 9.6 385 15.0 7.8 9.6 340 15.0 7.8 9.5 580 15.0 7.8 9.5 480 15.0 7.8 9.5 450 15.0 7.8 9.5 415 15.0 7.8 9.5 415 15.0 7.7 9.5 325 15.0 7.8 9.3 475 15.0 7.8 9.4 335 15.0 7.9 9.4 335 15.0 7.8 9.3 305 15.0 7.8 9.2 270 15.0 H

REPORT Sample: 03900493				Slip Sewer, (100)	1045	to determine the acute lethality effluents to fish. OME, 1983).			TOTAL MORTALITY	× 00:	0000
TOXICITY TEST REPORT		: Dofasco Hamilton, ONT	: West Central : Iron and Steel	: East Boat Slip	: BAR : Grab : S. Ha : 06/18/90 : 06/19/90	: STATIC (Protocol to determine of liquid effluents to	: Rainbow trout		SED TIME	0 48:00 72:00 96:00	0000
The Company	TEST CONDITIONS	Company	Region	Control point	Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	TEST E L A P S CONC.	x 00:00 24:00	100 100 Control 0 Control 0

8.5 8.4 535 16.0

7.9 9.8 539 16.0 16.0 16.5

Control pH 02 ppm Cond, Temp(C)

8.4 8.6 542 16.0

15.5

16.0 16.0

7.9 9.7 541 16.0

Control pH 02 ppm Cond. Temp(C)

8.1 9.1 743 16.0

7.9 9.0 756 16.0

pH 02 ppm Cond. Temp(C)

100

16.0 16.0 15.5

7.9 8.6 740 16.0

7.9 9.0 752 16.0 16.0 15.5

pH 02 ppm Cond. Temp(C)

100

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

TEST CONC.

Sample Number: 03900493

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

TEST CONC. ×

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900619

TIME ELAPSED TEST CONC.

00:00 24:00 48:00 72:00 96:00

8.0 9.0 646 15.0	8.0 9.1 653 15.0	8.3 8.2 537 15.0	8.4 8.8 542 15.0
14.5	14.5	14.5	14.5
15.5	15.5	15.5 1	15.5 15.5 14.5
15.5	15.5	15.5	15.5
8.0 9.2 648 16.0	8.0 9.2 648 16.0	7.9 9.5 549 16.0	7.9 9.5 549 16.0
pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
0	0	trol	trol

MISA Trout

TEST CONDITIONS		2020020
: Company	Dofesco Hamilton, ONT	TEST E L A P S E
Region :	(1400002) West Central Iron and Steel	00:00
Control point :	East Boat Slip Sewer, (100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab S. Ha 08/20/90 08/21/90 08/21/90 et: 1520	
Type of Bioassay :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	
	: Rainbow trout	Cond. 5 Temp(C) 15
Weight(gm) : Length(mm) : MORTALITY DATA		Control pH 7.5 02 ppm 8.2 Cond. 533 Temp(C) 15.0
TEST ELAPSE CONC.	ED TIME TOTAL HORTALITY	
x 00:00 24:00 4	00:00 24:00 48:00 72:00 96:00	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	
96 Hour LC50 :	Non-lethal	
95% fid. limits :	× 0.0 - 0.0	
Comments	: Single Concentration Test; non-lethal	

7.9 9.2 585 16.0

8.2 9.2 580 15.0 15.5 15.5 15.5 1

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900706

TOXICITY TEST REPORT

8.2 9.2 580 15.0 15.5 15.5 15.5 1

8.3 9.4 533 16.0

7.9 8.2 539 15.0 15.5

15.5 15.5

8.3 9.4 536 16.0

7.9 8.2 537 15.0 15.5 15.5 15.5 1

15.5

15.5

16.0

15.5

15.5

8.0 9.3 596 15.5

15.5

15.5

15.5

15.5

TOXICITY TEST REPORT Sample: 03900917	TOXICITY TEST PARAMETERS
TEST CONDITIONS	
Company : Dofasco Hamilton, ONT	Sample Number: US900917
(1460005) Region : West Central	00:00 24:00 48:0
Control point : East Boat Slip Sewer, (100)	0
	Cond. 555 15.0 15.5 14.0 14.0
• •• ••	100 pH 8.1 9.0 10.0 Cond. 555 Temp(C) 15.5 15.0 15.5 14.0 14.0
Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	7.9
Test Animal : Rainbow trout	15.0 15.5 14.0
	Control pH 8.0 8.4 0.5 ppm 8.6 9.5
MORTALITY DATA	15.5 15.0 15.5 14.0
TEST ELAPSED TIME TOTAL CONC. MORTALITY	
00:00 24:00 48:00 72:00 96:00	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
96 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 %	
Comments : Single Concentration Test; Non lethal	

TOXICITY TEST PARAMETERS

Sample Number: 03890284

00:90	8.5 9.8 559 14.0	α.
PSED TIME 00:00 04:00 24:00 48:00 72:00 96:00	14.5	
48:00	14.5 14.5 14.5 14.5	
I M E 24:00	14.5	
D T 00:00	14.5	
ELAPSED TIME 00:00 04:00 24:00	7.9 9.0 563 14.5	7.9
m D	Control pH 02 ppm Cond. Temp(C)	Ha
TEST CONC.	Control	10

8.5 9.8 559 14.0	8.5 9.6 572 14.0	8.4 9.4 582 14.0	8.4 9.6 600 14.0	8.4 9.6 622 14.0	8.3 9.7 654 14.0
14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5
7.9 9.0 563 14.5	7.9 9.1 565 14.5	7.9 9.2 574 14.5	7.9 9.1 595 14.5	7.9 9.2 615 14.5	7.8 9.1 644 14.5
pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Control	10	50	07	92	100

TOXICITY TEST PARAMETERS

Sample: 03890332

TOXICITY TEST REPORT

TEST CONDITIONS

	TOXICITY TEST REPORT Sample: 03890333	TOXICI	TOXICITY TEST PARAMETERS	METERS
TEST CONDITIONS Company Region Industry	: Dofasco Hamilton, ONT (1460055) : West Central : Iron and Steel	Sample TEST CONC.	Sample Number: 03890333 TEST E L A P S CONC. 00:	390333 A P S E D 00:00 24
Control point Laboratory Sampling Method Sampled By		100	pH 02 ppm cond. Temp(C)	7.8 9.8 614 14.5
Date Collected Received Tested	: 12/12/89 : 12/12/89 : 12/13/89 at: 1800	99	pH 02 ppm Cond. Temp(C)	7.8 9.6 590 14.5
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm Cond.	7.8 9.5 584
<pre>Test Animal Weight(gm) Length(mm)</pre>	: Rainbow trout	20	Temp(C) pH 02 ppm	7.8
MORTALITY DATA			Cond. Temp(C)	14.5
TEST E L A P	TOTAL	10	pH 02 ppm cond.	7.8
% 00:00 24:0	00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ιν	Temp(C) DH Cond. Temp(C)	7.8 8.7 560 14.5
trol 0	000	Control	ol pH O2 ppm Cond. Temp(C)	7.8 8.4 558 14.5
96 Hour LC50	: Non-lethal			
Comments	Non-lethal			

8.3 589 14.0 14.0 14.0

14.0

14.0

14.0

8.1 635 635 14.0 8.2 9.1 608 14.0

14.0

14.0

14.0

14.0

14.0

14.0

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

8.5 9.3 562 14.0

14.0

14.0

14.0

14.0

14.0

14.0

14.0

14.0

14.0

14.0 14.0 14.0

215

	TOXICITY TEST REPORT	REPORT	Sample: 03900057	TOXICI	TOXICITY TEST PARAMETERS	HETERS	
TEST CONDITIONS					73000020 .achmile of cons	700057	
Company	: Dofasco Hamilton, ONT	-		TEST	E L A	ELAPSED	-
Region	: West Central : Iron and Steel	e e		CONC		00:00 24:00 48	00:5
Control point	: Ottawa Street Sewer, (200)	t Sewer, (20	10)		=	1	
Laboratory Sampling Method Sampled By	BAR Grab S. Ha			000	pH 02 ppm Cond. Temp(C)	9.7 703 15.0	14.5
Received	: 01/23/90 : 01/24/90 at:	: 1600		\$9	pH 02 ppm Cond.	6.00	
Type of Bioassay	STATIC (Protocol to determine the ac of liquid effluents to fish,	determine t fluents to f	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	Temp(C) PH 02 ppm	8.0 9.2	14.5
	: Rainbow trout	44			Cond. Temp(C)	15.0	14.5
Length(mm)				20	pH 02 ppm	9.0	
MORTALITY DATA					Cond. Temp(C)	572 15.0	14.5
TEST E L A P S	SED TIME		TOTAL MORTALITY	10	pH 02 ppm	9.5	
x 00:00 54:00	00:00 24:00 48:00 72:00 96:00	9:00	×		Temp(C)	15.0	14.5
40 65 70 70 70 70 70 70 70 70 70 70 70 70 70	00000	00000	00000	5	pH O2 ppm Cond. Temp(C)	8.0 9.2 549 15.0	14.5
itrol 0		000	000	Control	L pH O2 ppm Cond. Temp(C)	8.0 9.4 538 15.0	14.5
96 Hour LC50	: Non-lethal	•					
Comments	Non-lethal						

0.887.4 888.04 88.00.4 80.00.4 8.00.7

4.5 14.5 14.5

4.5 14.5 14.5

14.5

14.5

14.5

4.5 14.5

14.5

14.5

:00 48:00 72:00 96:00

TIME

14.5

14.5

14.5

4.5 14.5

00:00 24:00 48:00 72:00 96:00 ELAPSED TIME

8.1 9.8 761 14.0	8.2 10.1 768 14.0	8.5 9.9 522 14.0	8.5 10.2 524 14.0
14.5	14.5	14.5	14.5
14.0 14.5 14.5	14.0 14.5 14.5	14.0 14.5	14.0 14.5 14.5
14.0	14.0	14.0	14.0
8.1 9.8 761 15.0	8.1 9.8 761 15.0	7.9 8.6 545 15.0	7.9 8.6 545 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
00	00	ntrol	ntrol

MISA Trout

Sample: 03900207 TOXICITY TEST REPORT

TEST CONDITIONS

: Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel Region Industry Company

Ottawa Street Sewer, (200) Control point

Laboratory Sampling Method Sampled By Date Collected Received Tested

at: 1440 BAR Grab D. Spong 03/19/90 03/20/90 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Type of Bioassay

: Rainbow trout Test Animal Weight(gm) Length(mm)

MORTALITY DATA

TOTAL MORTAL ITY TIME ELAPSED TEST CONC.

00:00 24:00 48:00 72:00 96:00 34

0000

: Non-lethal 96 Hour LC50

0.0 0.0 95% fld. limits : Single concentration test; non-lethal

Comments

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900207

TIME ELAPSED TEST CONC.

00:00 24:00 48:00 72:00 96:00

8.1 10.4 806 5 14.0	10.3 799 14.0	8.4 10.1 541 5 14.0	8.4 10.2 540 5 14.0
14.5	14.5	14.5	14.
14.0 14.5	14.0 14.5	14.0 14.5	14.0 14.5 14.5
14.0	14.0	14.0	14.0
10.1 74.7 15.5	10.1 747 15.5	7.9 8.2 549 15.0	7.9 8.2 549 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900301

TOXICITY TEST REPORT

ж

Company Company Company Company Company Control Hamilton, ONT (14,60005) Control Contr	
stry : West Central stry : West Central stry : Iron and Steel ratory : BAR ling Method : Grab collected : 05/14/90 at: 940 collected : 05/14/90 at: 940 seceived : 05/16/90 at: 940 of liquid effluents to himmal : Rainbow trout (Protocol to determine of liquid effluents to himmal : Rainbow trout E L A P S E D T I M E E L A P S E D T I M E E L A P S E D T I M E erol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
rol point : Ottawa Street Sewer, (2 ling Method : Grab Grab Grab OS/14/90 OS/14/90 OS/14/90 OS/14/90 OS/16/90 OS/16/	
Fatory EAR E	Wer, (200)
of Bioassay : STATIC (Protocol to determine of Liquid effluents to of Liquid effluents to nt(gm) : Rainbow trout : Rainbow trout : LAPSED TIME ELAPSED TIME 00:00 24:00 48:00 72:00 96:00 crol 0 0 0 0 0 crol 0 0 0 0 crol 0 0 crol 0 0 0 0 crol 0 0 crol 0 0 0 0 0 0 crol 0 0 0 0 0 0 crol 0 0 0 0 0 0 crol 0 0 0 0 0 crol 0 0 0 0 0 crol 0 0 crol 0 0 0 crol 0	0%
Animal : Rainbow trout th(gm) : th(mm) : th(mm) : th(mm) : th(mm) : th(mm) : th(mm) : th(gm) : E L A P S E D T I M E 00:00 24:00 48:00 72:00 96:00 trol 0 0 0 0 0	ermine the acute lethality ents to fish. OME, 1983).
ALITY DATA E L A P S E D T I M E 00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 trol 0 0 0 0 0 trol 0 0 0 0 0 trol 0 0 0 0 0	
00:00 24:00 48:00 72:00 96:00 00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 trol 0 0 0 0 0 trol 0 0 0 0 0	
	TOTAL MORTALITY
0000	х
	0000
96 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 %	*

TOXICITY TEST PARAMETERS

		00:96	8.2 9.7 772 14.5	8.2 9.8 775 14.5	8.5 10.1 534 14.5	8.5 10.0 542 14.5
		00:00 24:00 48:00 72:00 96:00	14.5 14.0	14.0	14.0	14.0
	TIME	48:00	14.5	14.5	14.5	15.0 14.5 14.0
		24:00	15.0	15.0	15.0	15.0
3900389	ELAPSED	00:00	7.9 8.2 766 16.0	7.9 8.2 766 16.0	7.9 9.0 538 16.0	7.9 9.0 538 16.0
Sample Number: 03900389	tin		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST	2	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 01900107

TOXICITY TEST REPORT

8.0 560 750 0.0

7.9 9.3 455 15.0

7.8 9.2 390 15.0

7.9 9.2 355 15.0

7.9 9.2 325 15.0

7.9 9.3 300 15.0

7.7 9.3 265 15.0

Region : Laboratory : Control point : Caboratory : Bampling Method : Gampled By : Campled By : C	
00 00 00 00 00 0	Hamilton, ONT
** ** ** *	(1460005) West Central Iron and Steel
** ** *	Ottawa Street Sewer, (200)
ted /ed	Grab S. Ha 06/18/90 06/19/90 06/20/90 at: 1050
Type of Bioassay : S	STATIC (Protocol to determine the acute lethality of liquid effluents to fish, OME, 1983).
Test Animal : R. Weight(gm) : Length(mm) :	Rainbow trout
MORTALITY DATA	
TEST ELAPSE CONC.	D IIME TOTAL HORTALITY
x 00:00 24:00 48:	48:00 72:00 96:00
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000
96 Hour LC50 : N	Non-lethal
95% fid. limits :	× 0°0 - 0°0
Comments : Si	Single Concentration Test; non-lethal

TOXICITY TEST PARAMETERS

Sample: 03900494

TOXICITY TEST REPORT

	00:96	7.9 8.4 753 16.0	8.2 9.0 750 16.0	8.5 9.1 537 16.0	8.4 9.1 540 16.0
	1 M E 48:00 72:00 96:00	15.5	15.5	15.5	15.5
	I H E	16.0	16.0	16.0	16.0 16.0 15.5
	T :00	16.0	16.0	16.0	16.0
03900494	ELAPSED 00:00 24	7.9 8.8 766 16.0	7.9 8.8 766 16.0	7.9 9.6 534 16.0	7.9 9.6 534 16.0
Sample Number: 03900494	ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	100	Control	Control

TEST CONC. ж

8.2 8.7 544 15.0

15.5 15.5 14.5

7.9 9.6 544 16.0

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

00:96	7.7 7.8 7.8 660 15.0	7.9 9.2 666 15.0	8.3 9.2 535 15.0
P S E D T I M E 00:00 24:00 48:00 72:00 96:00	14.5	14.5	14.5
T 1 M E	15.5 15.5 14.5	15.5 15.5	15.5 15.5 14.5
D T	15.5	15.5	15.5
E L A P S E D 00:00 24	8.0 9.7 658 16.0	8.0 9.7 658 16.0	7.9 9.6 544 16.0
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	02 ppm cond. Temp(c)
TEST CONC.	100	100	Control

MISA Trout

0000 : Single Conc. Test; 10% mort. a 100% eff. conc : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY : Ottawa Street Sewer, (200) BAR Grab S. Ha 08/20/90 08/21/90 at: 1530 0.0 00:00 24:00 48:00 72:00 96:00 2000 Dofasco Hamilton, ONT (1460005) West Central Iron and Steel Rainbow trout ELAPSED TIME 000 >100% 0.0 0000 95% fid. limits Type of Bioassay Laboratory Sampling Method Sampled By Date Collected Received TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 0000 Test Animal Weight(gm) Length(mm) Comments 100 100 Control Control Region Industry Company TEST CONC. ж

SLOPE of Mortality Curve : LC50 Calculated By :

Sample Number: 03900707

TOXICITY TEST PARAMETERS

Sample: 03900707

TOXICITY TEST REPORT

00:96	8.0 9.4 606 16.0	7.9 9.3 606 16.0	8.3 9.4 538 16.0	8.3 9.6 535 16.0
72:00	15.5	15.5	15.5	15.5
T 1 M E	15.5	15.5	15.5	15.5
Z4:00	15.5	15.5	15.5	15.5
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.1 9.0 603 15.0	8.1 9.0 603 15.0	7.9 8.4 541 15.0	7.9 8.4 541 15.0
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900816

TOXICITY TEST REPORT

00:96	8.1 9.4 588 15.5	8.1 593 5.5	8.4 9.0 532 15.5	8.4 9.4 526 15.5
72:00	15.5	15.5	15.5	15.5
T I M E	15.5	15.5	15.5	16.0 15.5
T 00:53	16.0	16.0	16.0	16.0
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.1 8.4 591 16.0	8.4 591 16.0	8.0 8.6 543 16.0	8.6 5.43 16.0
ш	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

TEST CONDITIONS		
Company Region Industry	: Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel	
Control point	: Ottawa Street Sewer, (200)	0)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Ha : 10/22/90 : 10/23/90 at: 1450	
Type of Bioassay	: STATIC (Protocol to determine the of liquid effluents to fi	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	
MORTALITY DATA		
TEST E L A P	SED TIME	TOTAL MORTALITY
x 00:00 24:00	0 48:00 72:00 96:00	**
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000
96 Hour LC50	: Non-lethal	
95% fid. limits	% 0°0 - 0°0 :	
	check act	lades it

8.3 10.0 545 14.0

pH 02 ppm Cond. Temp(C)

Control

15.0 15.5 14.0

15.0 15.5 14.0

pH 02 ppm Cond. Temp(C)

Control

8.1 10.0 574 14.0

15.0 15.5

8.0 8.8 569 15.5

> pH 02 ppm Cond. Temp(C)

100

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

TEST CONC.

Sample Number: 03900918

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

8.8 569 15.5 15.0 15.5 14.0 1

pH 02 ppm Cond. Temp(C)

100

Company : Region : Industry : Control point :		
y point	Dofasco Hamilton, ONT (146005)	Samp
••	West Central Iron and Steel	2
	Boiler House Sewer #1, (300)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab S. Ha 01/23/90 01/23/90 01/24/90 at: 1600	100
Type of Bioassay :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07
Test Animal :: Weight(gm) :: Length(mm) ::	Rainbow trout	50
MORTALITY DATA		
TEST ELAPSE	D TIME TOTAL MORTALITY	10
x 00:00 24:00 4	48:00 72:00 96:00 x	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Cont
96 Hour LC50 :	Non-lethal	
95% fid. limits :	% 0°0 - 0°0	
Comments	Non-lethal	

OXICITY TEST PARAMETERS

E L A P	Ō	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	OZ ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
SED	00:00	8.1 9.8 756 15.0	8.0 9.4 677 15.0	8.0 9.2 623 15.0	7.9 9.0 580 15.0	7.9 9.0 559 15.0	7.9 9.0 549 15.0	7.9 8.4 536 15.0
	24:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
E .	48:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	72:00 96:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	00:96	8.1 9.1 767 14.5	8.3 8.9 680 14.5	8.3 8.8 623 14.5	8.2 8.3 579 14.5	8.4 8.8 555 14.5	8.4 8.9 543 14.5	8.8 8.8 534 14.5

TEST CONDITIONS Dofasco House Steel Control point Boiler House Steel Control point Control		TOXICITY TEST REPORT	ST REPORT Sample: 03900300	TOXICITY TEST PARAMETERS
thod : BaR 100 pH 02 ppm 100 pH 04/17/90 at: 1520 02 ppm 100 pH 04/17/90 at: 1520 02 ppm 100 pH 04/17/90 at: 1520 02 ppm 100 pH 05 ppm 100 pH 05 ppm 06 ppm 100 pH 06 ppm 100 pH 06 ppm 100 pH 07 ppm 100 pH 08 ppm 100 pH 09 ppm 100 pH 09 ppm 100 pH 10	TEST CONDITIONS Company Region		ONT al teel	E L A
10 10 10 10 10 10 10 10	Control point Laboratory Sampling Method Sampled By		se Sewer #1, (300)	pH 02 ppm Cond. Temp(C)
STATIC CPOTOCOL to determine the acute lethality CPOTOCOL to defluents to fish. OME, 1983). COND.	Received			pH 02 ppm cond. Temp(C)
triggn) : Total MortaLity E L A P S E D T I M E MORTALITY E L A P S E D T I M E MORTALITY Total 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Type of Bloassay		to determine the acute lethality effluents to fish. OME, 1983).	pH 02 ppm Cond.
E L A P S E D T I M E HORTALITY 00:00 24:00 48:00 72:00 96:00 00:00 24:00 48:00 72:00 96:00 00:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Weight(gm) Length(mm) MORTALITY DATA			pH 02 ppm cond.
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	E L 00:00	E D 48:00	E TOTAL MORTALITY 96:00	pH 02 ppm Cond. Temp(C)
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000			pH 02 ppm Cond. Temp(C)
: Non-lethal : 0.0 - 0.0	option 0			pH 02 ppm cond. Temp(C)
	96 Hour LC50 95% fid. limits		0.0	

8.8 8.8 661 14.5

14.5

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00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

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14.5 14.5

8.4 8.9 541 14.5

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14.5 14.5

7.9 9.3 395 15.0

7.9 8.6 410 15.0

7.8 9.5 495 15.0

7.9 9.5 490 15.0

7.8 9.3 365 15.0

7.7 8.7 380 15.0

7.9 9.5 445 15.0

7.9 9.6 415 15.0

7.9 9.3 330 15.0

7.6 8.7 345 15.0

7.9 9.6 390 15.0

7.9 9.6 370 15.0

7.9 9.4 300 15.0

7.8 8.7 310 15.0

7.9 9.6 360 15.0

7.9 9.6 325 15.0

7.9 9.4 265 15.0

7.8 8.6 275 15.0

7.8 9.6 340 5.0

7.8 9.6 330 5.0

8.0 9.3 425 15.0

7.8 8.6 490 15.0

7.9 9.5 590 15.0

7.9 9.5 575 15.0

7.6 8.5 600 15.0

7.7 9.6 700 15.0

7.8 9.5 695 15.0

00:00 02:00 25:00 47:00 71:00 96:00 15.0 7.6 15.0 7.8 15.0 7.8 15.0 7.8 15.0 7.7 7.6 7.7 TIME 7.6 9.1 460 15.0 7.7 9.2 390 15.0 7.7 9.2 360 15.0 7.7 9.3 325 15.0 7.6 9.1 570 15.0 ELAPSED SLOPE of Mortality Curve : LC50 Calculated By : 8.1 8.1 630 15.0 TOXICITY TEST PARAMETERS Sample Number: 01900130 pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) Temp(C) Temp(C) (D)dwa (D)dwa] pH 02 ppm Cond. pH 02 ppm cond. pH 02 ppm cond. (D)dwa 02 ppm Cond. PH 02 ppm Control TEST CONC. 30 20 10 65 07 100 200000 Sample: 01900130 STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY Boiler House Sewer #1, (300) 96:00 --000-MOE Grab M. Smithson 06/28/90 06/29/90 at: 1200 TOXICITY TEST REPORT 71:00 0.0 000000 : West Central : Iron and Steel Hamilton, ONT (1460005) Rainbow trout TIME 47:00 MISA Audit 000000 Dofasco >100% 0.0 25:00 ELAPSED 000000 00:00 02:00 000000 Laboratory Sampling Method Sampled By Date Collected Received Tested of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 000000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 65 40 30 20 10 Control Company Type TEST CONC. 34

7.8 8.7 465 15.0

7.9 15.0

15.0

15.0

7.8 8.7 400 15.0

7.9

15.0

15.0 7.9 15.0

15.0

7.8 15.0 7.8 15.0 7.8 15.0

7.8 9.0 270 15.0

15.0

TOXICITY TEST PARAMETERS

Sample: 03900621

TOXICITY TEST REPORT

	TEST ELAPSED TIME	x 00:00 24:00 48:00 72:00 96:00		100 pH 8.1 8.1 02 ppm 9.5 9.7 cond, 639 649 Temp(C) 15.5 15.0 14.5 14.0	65 pH 8.0 8.2 02 ppm 9.5 9.6 cond. 612 618 618 618	6.2	15.5 15.0 14.5	20 pH 7.9 8.2 02 ppm 9.6 9.6	567 15.5 15.5 15.0 14.5	10 pH 7.9 8.4 02 ppm 9.6 9.6	15.5 15.0 14.5	5 pH 7.9 8.2 02 pcm 9.6 9.1 547 15.0 14.5 14.0	Control pH 7.8 8.4 9.6 Cond. 544 15.5 15.0 14.5 14.0				
	: Dofasco Hamilton, ONT	: West Central : Iron and Steel	: Boiler House Sewer #1, (300)		: 07/25/90 at: 1110	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	: Rainbow trout	•••		SED TIME TOTAL MORTALITY	00:00 24:00 48:00 72:00 96:00		000	: >100%	% 0°0 - 0°0 :	: LC50 >100	
TEST CONDITIONS	Company	Region Industry	Control point	Laboratory Sampling Method Sampled By Date Collected	Received	Type of Bioassay	Test Animal Deight(om)	Length(mm)	MORTALITY DATA	TEST E L A P CONC.	x 00:00 24:0	100 65 65 20 20 20 20		96 Hour LC50	95% fid. limits	Comments	

TOXICITY TEST PARAMETERS

	1 M E
782	P S E D T
MIDEL: USBYU	ELA
Sample N	TEST

00:00 04:00 24:00 48:00 72:00 96:00

55 14.5 14.5 14.5 14.5 14.5 1 51 14.5 14.5 14.5 14.5 14.5 1 51 14.5 14.5 14.5 14.5 1 52 14.5 14.5 14.5 14.5 1 53 14.5 14.5 14.5 14.5 1 54 14.5 14.5 14.5 14.5 1	Control pH 02 ppm Cond. Temp(C)	10 pH 02 ppm cond. Temp(C)	20 pH 02 ppm Cond. Temp(C)	40 pH 02 ppm cond. Temp(C)	65 pH 02 ppm Cond. Temp(C)	100 pH 02 ppm cond.
14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5	7.9 9.2 560 14.5	7.9 9.2 561 14.5	7.9 9.1 561 14.5	7.9 9.3 562 14.5	7.9 9.2 563 14.5	9.19
14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5	14.5	14.5	14.5	14.5	14.5	7, 5
14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5	14.5	14.5	14.5	14.5	14.5	2 71
	14.5		14.5	14.5	14.5	7 7
800.44 81.00.44	14.5	14.5	14.5	14.5	14.5	14.5
1	8.5 9.4 554 14.0	8.5 9.1 564 14.0	8.5 9.3 572 14.0	8.4 9.3 574 14.0	8.3 9.4 575 14.0	8.0 9.4 580

ELAPSED Sample Number: 03890330 TEST 000000 Sample: 03890330 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTAL 1 TY : West Bay Front Sewer, (400) BAR Grab D. Spong 12/12/89 12/12/89 12/13/89 at: 1830 TOXICITY TEST REPORT 00:00 24:00 48:00 72:00 96:00 0.0 : Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel 000000 Rainbow trout ELAPSED TIME : Non-lethal : Non-lethal 000000 0.0 000000 000000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 000000 Test Animal Weight(gm) Length(mm) Region Comments 100 65 40 20 10 5 Control Company TEST CONC.

TOXICITY TEST PARAMETERS

TIME

00:9	8.1 9.7 677 14.0	8.4 9.8 638 14.0	8.4 9.7 612 14.0	8.5 9.6 581 14.0	8.5 9.4 563 14.0	8.5 9.5 555 14.0	8.6 9.5 543 14.0
48:00 72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
8:00 3	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	14.0	14.0	14.0	14.0	14.0	14.0	14.0
00:00 24:00	7.7 8.3 673 14.5	7.8 8.2 624 14.5	7.8 8.7 617 14.5	7.8 8.9 580 14.5	7.9 8.9 564 14.5	7.9 8.9 556 14.5	7.8 8.4 560 14.5
	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	l pH 02 ppm cond. Temp(C)				
CONC.	100	65	07	20	10	80	Control

8.3 8.3 14.5

14.5

14.5

14.5

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900056

TOXICITY TEST REPORT

TEST		100 pH 02 02 Cor	65 pH 02 02 Cor	40 pH 02 Cor	20 pH 02 02 Cor	10 02 02 Cor	5 002 007 Ter
ELA		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
P S E	00:00	7.8 9.1 760 15.0	7.8 8.7 678 15.0	7.9 8.7 627 15.0	7.9 8.4 583 15.0	7.9 8.5 560 15.0	7.9 8.6 551 15.0
	24:00	14.5	14.5	14.5	14.5	14.5	14.5
H H	24:00 48:00	14.5	14.5	14.5	14.5	14.5	14.5
	72:00 96:00	14.5	14.5	14.5	14.5	14.5	14.5
	00:96	8.2 9.1 781 14.5	8.1 8.3 691 14.5	8.4 9.1 632 14.5	8.4 9.1 582 14.5	8.4 9.0 558 14.5	8.8 8.8 547 14.5

	TOXICITY TEST REPORT	EST REPORT	Sample: 03900125	TOXICIT	TOXICITY TEST PARAMETERS	METERS		
TEST CONDITIONS				Sample	Sample Number: 039	03900125		
Company	Hamilton, ONT	ONT		TEST	EL	LAPSE	D T	TIME
Region Industry	: West Central : Iron and Steel	ral Steet		, 200 %		00:00	24:00	00:00 24:00 48:00 72:0
Control point	: West Bay	West Bay Front Sewer, (400)	(00)		1			
Laboratory Sampling Method Sampled By	BAR Grab S. Ha			100	pH 02 ppm Cond. Temp(C)	7.6 789 14.5	8.8 798 14.5	
Received Tested	. 02/20/90 : 02/21/90	at: 1100		100	pH 02 ppm Cond.	7.6	8.8	
Type of Bioassay	: STATIC (Protocol of liquid	to determine effluents to	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	99	Temp(C) PH 02 ppm	7.8		
Test Animal		out			Cond. Temp(C)	14.5		
Length(mm)				07	pH 02 ppm	7.9		
MORTALITY DATA					Temp(C)	14.5	14.5	14.0
TEST E L A P	SED TI	E E	TOTAL MORTALITY	20	DH 02 ppm	8.9		
x 00:00 24:00 48:	00 48:00 72:00 96:00	00:96	**		Temp(C)	14.5	14.5	14.0
100 0 10 65 0 10 70 0 0	00000	55500	100	10	pH 02 ppm Cond. Temp(C)	7.9 8.8 573 14.5	14.5	14.0
o 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000	0000	5	pH 02 ppm Cond. Temp(C)	7.9 8.5 561 14.5	14.5	14.0
96 Hour LC50 95% fid. limits	: 51.0 % : 40.0 -	85.0 ×		Control	pH 02 ppm Cond. Temp(C)	7.9 8.4 545 14.5	14.5	14.0

00:96 00

8.00.41 80.041 80.041 80.041 4.00.41 80.041

0. 0. 0.

TEST CONC. 34

72:00 96:00	8.0 10.1 831 14.0	8.3 10.2 727 14.0	8.3 10.2 659 14.0	8.3 10.0 599 14.0	8.4 10.3 569 14.0	8.4 9.9 555 14.0
5.00	14.0	14.0	14.0	14.0	14.0	14.0
78:00	14.5	14.5	14.5	14.5	14.5	14.5
24:00 4	14.0	14.0	14.0	14.0	14.0	14.0
	8.0 10.4 809 15.0	7.9 9.9 720 15.0	7.9 9.5 655 15.0	7.9 9.3 583 15.5	7.9 9.2 559 15.5	7.9 9.2 549 16.5
	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
	100	9	07	50	10	10

TOXICITY TEST PARAMETERS

Sample: 03900299

TOXICITY TEST REPORT

TEST CONDITIONS			03000000 Numbers 03000000	00000					
Сопрапу	: Dofasco Hamilton, ONT	TEST	NUMBER: USA	ш	1 1	E			
Region Industry	(146UUU)) : West Central : Iron and Steel	CONC		00:00	00:00 24:00 48:00 72:00 96:00	8:00 7	2:00 8	00:90	
Control point	: West Bay Front Sewer, (400)	001	7	0				-	
Laboratory Sampling Method Sampled By	BAR Grab S. Ha		Cond.	15.0	14.0	14.0	14.5	9.5 823 15.5	
Vale conscient Received Tested	: 04/17/90 at: 1515	99	pH 02 ppm Cond.	10.0 706 15.0	14.0	14.0	14.5	8.3 9.7 721 15.5	
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	40	PH 005	10.1				9.6	
Test Animal	: Rainbow trout		Temp(C)	15.0	14.0	14.0	14.5	15.5	
Length(mm)		20	DH D2 D2 D2 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3	10.01				4.0	
MORTALITY DATA			Temp(C)	15.0	14.0	14.0	14.5	15.5	
TEST E L A P CONC.	SED TIME TOTAL MORTALITY	10	PH 02 ppm	9.9				9.8	
x 00:00 24:0	00:00 24:00 48:00 72:00 96:00		Temp(C)	15.0	14.0	14.0	14.5	15.5	
100 65 65 70 70 70 70 70 70 70 70 70 70 70 70 70	00000	N	pH 02 ppm Cond. Temp(C)	8.0 9.9 551 15.0	14.0	14.0	14.5	8.4 9.3 554 15.5	
itrol 0	000	Control	t pH 02 ppm cond. Temp(C)	7.9 9.9 540 15.0	14.0	14.0	14.5	8.4 9.3 531 15.5	
96 Hour LC50	: Non-lethal								
95% fid. limits	× 0°0 - 0°0 :								
Comments	: Non-lethal								

MISA Trout

TEST CONDITIONS		- Come	00200020 "Today" (1 o) care 3	00200
Company Region Indistry	Dofasco Hamilton, ONT (1460005) West Central	TEST CONC.	E L J	03500350 E L A P S E 00:00
Control point Laboratory Sampling Method Samoled By		100	pH 02 ppm Cond. Temp(C)	8.0 7.8 84.2 16.0
Date Collected Received Tested	: 05/14/90 : 05/15/90 : 05/16/90 at: 945	65	pH 02 ppm Cond. Temp(C)	7.9 7.9 731 16.0
Type of Bioassay		07	pH 02 ppm cond.	7.9 8.4 654
lest Animal Weight(gm) Length(mm) MORTALITY DATA	Kandon trout	20	pH 02 ppm cond. Temp(C)	7.9 8.6 8.6 596 16.0
TEST E L A P	SED TIME TOTAL MORTALITY	10	DH 02 DDH DDH	8.6
× 00:00 24:0	00:00 24:00 48:00 72:00 96:00		Temp(C)	16.0
100 0 0 0 65 0 0 0 0 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0		5	pH 02 ppm cond. Temp(C)	7.9 8.8 548 16.0
o 0 0	000	Control	t pH O2 ppm Cond. Temp(C)	7.9 9.1 537 16.0
96 Hour LC50	: Non-lethal			
95% fid. limits	% 0°0 - 0°0 :			
Comments	: Non lethal			

8.3 9.8 658 15.0

14.0

14.5

15.0

7.9 8.4 654 16.0

8.1 9.7 850 15.0

14.0

14.5

15.0

8.0 7.8 842 16.0

00:00 24:00 48:00 72:00 96:00

TIME

ELAPSED

SLOPE of Mortality Curve : LC50 Calculated By :

8.0 9.0 742 15.0

14.0

14.5

15.0

7.9 7.9 731 16.0

8.4 9.9 598 15.0

14.0

14.5

15.0

7.9 8.6 596 16.0

8.5 10.0 561 15.0

14.0

14.5

15.0

7.9 8.6 564 16.0

8.5 10.0 538 15.0

14.0

14.5

15.0

7.9 8.8 548 16.0

8.4 9.7 535 15.0

14.0

15.0 14.5

Sample: 01900112
TEST REPORT
TEST
TOXICITY T

TEST CONDITIONS	rol.						
Company	• •	Dofasco Hamilton,	TNO ,				
Region Industry	** **		tral Steel				
Control point	**	West	Bay Front S	Sewer, ((007)		
Laboratory Sampling Method Sampled By Date Collected Received Tested	71	MOE Grab M. Smithson 06/13/90 06/14/90		1000			
Type of Bioassay	 	STATIC (Protocol of Liquid	to det defflue	to determine effluents to	the ac fish.	the acute lethality fish. OME, 1983).	ity
Test Animal Weight(gm) Length(mm)	00 00 00	Rainbow trout	trout				
MORTALITY DATA							
TEST E L CONC.	A P S	E D T I	E E		¥	TOTAL	
2 00:00	00:00 00:30	01:00 02:00		24:00 48:00	72:00	72:00 96:00	34
100 65 40 30 30 10 10 10 10 10 10 10 10 10 10 10 10 10	000000	000000	000000	000000	000000	000000	000000
96 Hour LC50	••	Non-lethal	hal				
95% fid. limits	ş	0.0	0.0 -	ж			
Comments	••	MISA Audit; Non-lethal	it; Non-	lethal			

TOXICITY TEST PARAMETERS

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LAPSED TIME	00:00 00:30 01:00	pH 8.1 02 ppm 8.0 cond. 700 Temp(c) 15.0						
	02:00 24:00 48:00 72:00 96:00	7.9 9.1 640 15.0	7.9 9.1 510 15.0	7.9 9.3 425 15.0	7.9 9.2 380 15.0	7.8 9.3 350 15.0	8.0 9.1 305 15.0	7.9
	7 00:5	7.8 9.6 790 15.0	7.9 9.7 635 15.0	7.8 9.6 480 15.0	7.8 9.6 470 15.0	7.8 9.6 430 15.0	7.9 9.7 375 15.0	7.8
	8:00 7	7.8 9.6 795 15.0	7.9 9.7 690 15.0	7.8 9.6 520 15.0	7.8 9.6 495 15.0	7.8 9.6 435 15.0	7.8 9.6 390 15.0	7.9
	72:00 8	7.8 8.6 660 15.0	7.7 8.7 520 15.0	7.8 8.5 435 15.0	7.8 8.7 390 15.0	7.8 8.8 355 15.0	7.9 8.7 315 15.0	7.8 8.7 275
	0:96	7.8 9.1 640 15.0	7.7 9.3 500 15.0	7.8 9.4 420 15.0	7.9 9.4 380 15.0	7.9 9.5 345 15.0	7.9 9.4 300 15.0	7.9

TOXICITY TEST PARAMETERS

		00:96	7.9 8.6 810 16.0	8.1 9.1 807 16.0	8.3 8.9 540 16.0	8.5 8.5 534 16.0
		72:00	16.0 15.5	15.5	15.5	15.5
	TIME	48:00 72:00 96:00	16.0	16.0	16.0	16.0
		24:00	15.5	15.5	15.5	15.5
3900495	ELAPSED	00:00 24:00	8.9 8.9 806 16.0	8.9 806 16.0	7.9 9.7 537 16.0	7.9 9.7 537 16.0
Sample Number: 03900495	m		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
Sample	TEST	**	100	100	Control	Control

_	TOXICITY TEST REPORT Sample: 03900622
TEST CONDITIONS	
Company :	Dofasco Hamilton, ONT (1460005) West Contral
point	Вау
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab S. Ha 07/23/90 07/25/90 at: 1140
Type of Bioassay :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	Rainbow trout
MORTALITY DATA	
TEST ELAPSE	D T I M E TOTAL HORTALITY
x 00:00 24:00 4	48:00 72:00 96:00 %
100 0 0 0 100 0 0 0 0 0 0 0 0 0 0 0 0 0	0000
96 Hour LC50 :	Non-lethal
95% fid. limits :	× 0.0 - 0.0
Comments	Non lethal; single concentration test

TOXICITY TEST PARAMETERS

Sample Number: 03900622

	72:00 96:00
I M	48:00
1 0	24:00
APSE	00:00
ELA	
TEST	**************************************

8.1 9.6 717 14.0	7.9 9.3 729 14.0	8.5 9.4 520 14.0	8.4 9.3 529 14.0
14.5	14.5	14.5	14.5
15.0	15.0	15.0	15.0
15.5	15.5	15.5	15.5
8.6 9.2 723 15.5	8.6 9.2 723 15.5	7.8 9.3 540 15.5	7.8 9.3 540 15.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
100	100	Control	Control

TOXICITY TEST REPORT Sample: U3900/08							
	TOXICII	TOXICITY TEST PARAMETERS	ETERS				
	Sample	Number: 03900708	80700				
	TEST CONC.	E L	LAPSED TIME 00:00 24:00 48:00 72:00 96:00	T I 1	I M E	5:00 8	00:9
: West Bay Front Sewer, (400) : BAR : Grab : S. Ha	100	pH 02 ppm Cond. Temp(C)	9.6 8.8 657 15.5	9.3 8.4 663 16.0			
: 08/20/90 : 08/21/90 : 08/21/90 at: 1540	100	pH 02 ppm Cond. Temp(C)	9.6 8.8 657 15.5	9.3 8.6 16.0			
: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	99	pH O2 ppm Cond.	8.9 8.9 5.5 5.5	16.0	15.5	15.5	8.3 9.3 16.0
	07	pH 02 ppm cond.	9.4				9.3
		Temp(C)	15.5	16.0	15.5	15.5	16.0
ELAPSED TIME TOTAL MORTALITY 00:00 24:00 48:00 72:00 96:00	20	pH 02 ppm Cond. Temp(C)	7.9 9.2 573 15.5	16.0	15.5	15.5	8.2 8.8 568 16.0
10 10 10 10 10 10 10 10 0 0 0 0 0 0 0 0	10	pH 02 ppm Cond. Temp(C)	7.8 9.1 559 15.5	16.0	15.5	15.5	8.4 9.3 547 16.0
0000	۲	pH O2 ppm Cond. Temp(C)	7.7 9.2 545 15.5	16.0	15.5	15.5	8.4 9.0 541 16.0
96 Hour LC50 : 80.6 % 95% fid. limits : 65.0 - 100.0 %	Control	of ph cond. Temp(C)	7.8 9.3 15.5	16.0	15.5	15.5	8.4 9.5 537 16.0

TOXICITY TEST PARAMETERS

Sample: 03900920

TOXICITY TEST REPORT

IEST COMPLITONS		1	11. — F 0300	0000				
Company : Do	Dofasco Hamilton, ONT (1460005)	Sample	Sample Number: U3900920 TEST E L A P S	USYOUYZU ELAPSED		TIME		
Region : We Industry : In	West Central Iron and Steel	2 %		00:00 24:00 48:00 72:00 96:00	7 00:5	8:00 7	2:00 9	00:9
Control point : We	West Bay Front Sewer, (400)	100	32	0 0	0			
Laboratory : BA Sampling Method : Gr Sampled By : S.	Grab Grab S. Ha 10.22.00		Cond.	9.7 628 15.5	8.4 633 15.0	15.5	14.0	14.0
	10/23/90 at: 1105	99	pH 02 ppm Cond.	8.7 9.7 604 7.5	ر 1	ر 7	16.0	9.6
Type of Bioassay : ST (P	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm	4.6				48.5
•••	Rainbow trout		Temp(C)	15.5	15.0	15.5	14.0	14.0
Length(mm) :		20	pH 02 ppm Cond.	8°.1 568 7.68	15.0	2.5	14.0	8.0 8.6 571
TEST ELAPSED CONC.	T I M E TOTAL MORTALITY	10	PH 02 ppm	9.1				8.5
00:00 24:00 48:00 72:00	00 72:00 96:00 %		Cond. Temp(C)	561 15.5	15.0	15.5	14.0	553
7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 7 7	50	pH 02 ppm Cond. Temp(C)	8.0 9.0 559 15.5	15.0	15.5	14.0	8.5 9.9 547 14.0
000	000	Control	pH O2 ppm Cond. Temp(C)	8.0 8.9 556 15.5	15.0	15.5	14.0	8.5 10.0 524 14.0
96 Hour LC50 : 6	65.0 - 100.0 ×							
95% fid. limits :	% 0.0 - 0.0							
Comments : LC	LC50 Range 65.00 - 100.00							

Company : Dofasco Hamilton, ON (1460005) Region : West Central Industry : Iron and Ste Control point : Bay Water In Control without : BAR						
	Dofasco Hamilton, ONT (1460005) West Central Iron and Steel			Sample TEST CONC.	Sample Number: 03890282 TEST E L A P S CONC. 00:	13890282 L A P S E 00:00
• •• •• ••	Intak			Control		9.3
	11/25/89 at: 1530 STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	the acute lethal ish. OME, 1983	ity).	20	ph 02 ppm cond. Temp(C) pH 02 pom	5.58
Test Animal : Rainbow trout Weight(gm) : Length(mm) :	W trout			07	Cond. Temp(C)	14.5
MORTALITY DATA TEST E L A P S E D T I CONC.	E E	TOTAL MORTALITY		59	Cond. Temp(C)	8 4
x 00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00 Control 0	4:00 24:00 48:00 7	72:00 96:00 0 0 0 0 0 0 0 0 0 0 10 10	× 000000000000000000000000000000000000	100	Cond. Temp(C) PH 02 ppm Cond. Temp(C)	20024
96 Hour LC50 : 72.7	3-6					
95% fid. limits : 60.6 Comments :	- 87.1 X					

SLOPE of Mortality Curve : 8.1 LC50 Calculated By : Probit

OXICITY TEST PARAMETERS

ę		00:00		07:00	00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00	00:42			
Control	pH 02 ppm Cond.	7.9 9.3 560 14.5	14.0	14.0	14.5	14.5	14.5	14.5	I .
10	pH 02 ppm Cond. Temp(C)	7.9 9.3 568 14.5	14.0	14.0	14.5	14.5	14.5	14.5	
50	pH 02 ppm Cond. Temp(C)	7.9 9.1 575 14.5	14.0	14.0	14.5	14.5	14.5	14.5	
07	pH 02 ppm Cond. Temp(C)	8.0 9.2 589 14.5	14.0	14.0	14.5	14.5	14.5	14.5	
92	pH O2 ppm Cond. Temp(C)	8.1 9.2 598 14.5	14.0	14.0	14.5	14.5	14.5	14.5	
100	pH 02 ppm Cond. Temp(C)	8.5 9.3 14.5	14.0	14.0	14.0 14.5	8.2 9.6 635 14.5			

TEST CONDITIONS			
Company	: Dofasco Hamilton, ONT (1460005) West Central		TEST CONC.
Control point			
Laboratory Sampling Method Sampled By	BAR Grab D. Spong		000
Date Collected Received Tested	: 12/12/89 : 12/13/89 at: 1800		25
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	e acute lethality sh. OME, 1983).	000
Test Animal Weight(gm) Length(mm)	: Rainbow trout		20 P
MORTALITY DATA			001
TEST E L A P S	SED TIME	TOTAL MORTALITY	01
x 00:00 24:00	0 48:00 72:00 96:00	**	→
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	0000	2
o o o o o o o o o o o o o o o o o o o	000	000	Control p
96 Hour LC50	: Non-lethal		
95% fid. limits	2 0.0 - 0.0 :		
Comments	: Non-lethal		

TOXICITY TEST PARAMETERS

	******		10.00.10	10.0.010	10:00:10	.0.10.10.10
8.0 9.3 605 14.5	8.3 9.5 585 14.5	8.4 9.5 575 14.5	8.5 9.6 569 14.5	8.5 9.6 564 14.5	8.5 9.6 559 14.5	8.6 9.5 543 14.5
14.5	14.5	14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5	14.5	14.0 14.5
14.0	14.0	14.0	14.0	14.0	14.0	14.0
7.9 10.3 600 14.5	7.9 9.8 583 14.5	7.9 9.4 572 14.5	7.9 9.2 566 14.5	7.9 9.1 565 14.5	7.9 9.1 560 14.5	7.8 8.4 560 14.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	of ph O2 ppm Cond. Temp(C)
100	9	07	20	10	5	Control

Sample Number: 03900059 000000 26 STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY : Bay Water Intake, (500) at: 1600 00:00 24:00 48:00 72:00 96:00 0.0 0000000 Dofasco Hamilton, ONT (1460005) West Central : West Central : Iron and Steel Reinbow trout : Non-lethal : Non-lethal BAR Grab S. Ha 01/23/90 01/23/90 000000 0.0 ELAPSED 000000 000000 Laboratory Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 000000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 65 40 20 10 5 Control Company TEST CONC. 34

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900059

TOXICITY TEST REPORT

8.8 542 14.5 8.4 8.9 623 14.5 8.5 9.0 554 14.5 8.4 9.0 673 7.5 8.3 8.6 586 14.5 8.4 9.1 564 14.5 00:00 24:00 48:00 72:00 96:00 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 ELAPSED TIME 14.5 14.5 14.5 14.5 14.5 14.5 14.5 8.0 9.0 560 15.0 8.0 9.0 550 15.0 8.0 8.7 626 15.0 8.0 8.9 586 15.0 8.0 9.0 554 15.0 7.9 9.1 753 15.0 7.9 8.9 680 15.0 pH 02 ppm Cond. Temp(C) Temp(C) Temp(C) remp(C) pH 02 ppm Cond. Temp(C) (D)dwa pH 02 ppm Cond. pH 02 ppm Cond. Temp(C) 02 ppm Cond. pH 02 ppm ED D Cond. Cond. Control TEST CONC. 10 40 20 100 65

TEST CONDITIONS			Come	Marchon 03000	124
Company Region Industry	: Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel		Semple TEST CONC.	Sample Number: USYUUIZO TEST E L A P S CONC. 00:(P S E 00:00
Control point Laboratory Sampling Method Sampled By Date Collected	: Bay Water Intake, (500) : BAR : Grab : S. Ha : 02/20/90		100	pH O2 ppm Cond. Temp(C)	8.1 10.3 714 15.0
Received	: 02/20/90 : 02/21/90 at: 1010		6	pH O2 ppm Cond. Temp(C)	10.01 10.00 15.0
ABSSBOIR 10 addi	Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	>	07	pH 02 ppm Cond.	8.0 9.7 602
Test Animal Weight(gm) Length(mm)	: Rainbow trout :		20	Temp(C) pH 02 ppm cond.	15.0 8.0 9.0 579
TEST E L A P	SED TIME TOTAL MORTALITY		10	pH 02 ppm	7.9
x 00:00 24:0	24:00 48:00 72:00 96:00	×		Temp(C)	15.0
100 0 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	0000	10	pH 02 ppm cond. Temp(C)	7.9 8.7 549 15.0
itrol 0	000	000	Control	t pH 02 ppm cond. Temp(C)	7.9 7.8 544 15.0
96 Hour LC50 95% fid. limits	: Non-lethal : 0.0 - 0.0 %				
Comments	: Non-lethal				

8.5 10.2 568 14.0

14.5

14.0 14.5

8.0 9.0 579 15.0

8.3 10.1 615 14.0

14.5

14.5

14.0

8.0 9.7 602 15.0

8.3 10.2 655 14.0

8.0 10.0 646 15.0

14.0 14.5 14.5

14.5

14.5

14.0

8.1 10.3 714 15.0

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

8.5 10.2 550 14.0

14.5

14.0 14.5

7.9 8.7 560 15.0

8.5 10.2 545 14.0

14.5

14.5

14.0

7.9 8.7 549 15.0

14.0 14.5 14.5

7.9 7.8 544 15.0

TEST CONC. 3%

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	00	0600	0+80	m & 0.0	N400	
	96:	8.0 9.9 770 14.0	8.0 10.1 768 14.0	8.3 9.8 550 14.0	8.5 10.4 540 14.0	
	48:00 72:00 96:00	14.0	14.0	14.0	14.0	
ME	48:00	14.0	14.0	14.0	14.0	
1	24:00	14.0	14.0	14.0	14.0	
APSE	00:00	8.3 11.5 765 15.0	8.3 11.5 765 15.0	7.9 8.2 549 15.0	7.9 8.2 549 15.0	
EL		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond, Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	
TEST	**	100	100	Control	Control	

MISA Trout

Sample: 03900298 TOXICITY TEST REPORT

TEST CONDITIONS

Company

(1460005) : Dofasco

West Central Iron and Steel

Region Industry

Bay Water Intake, (500) Control point

Laboratory Sampling Method Sampled By Date Collected Received Tested

BAR Grab S. Ha 04/16/90 04/17/90 at: 1545

: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Type of Bioassay

Rainbow trout Test Animal Weight(gm) Length(mm)

MORTALITY DATA

TOTAL MORTALITY TIME ELAPSED TEST CONC.

00:00 24:00 48:00 72:00 96:00 34

0000

Non-lethal 96 Hour LC50

0.0 : 95% fid. limits Single Concentration Test; non-lethal

Comments

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900298

TIME ELAPSED CONC.

00:00 24:00 48:00 72:00 96:00

8.3 9.4 764 15.0 8.2 9.3 769 15.0 8.8 8.8 541 15.0 14.5 14.5 14.0 14.5 14.5 14.5 14.0 14.5 14.0 14.0 14.5 14.5 8.1 760 750 15.0 8.1 760 15.0 7.9 9.0 540 15.0 7.9 9.0 540 15.0 Cond. Temp(C) Cond. Temp(C) Temp(C) Temp(C) DH 02 ppm Cond. pH 02 ppm Cond. pH 02 ppm pH 02 ppm Control Control 100 100

TEST CONDITIONS		Comple Nimber 03000301
Company	Dofasco Hamilton, ONT (146005)	TEST E L A P S CONC.
Region Industry	: West Central : Iron and Steel	00:00
Control point	: Bay Water Intake, (500)	
Laboratory Sampling Method Sampled By	BAR Grab D. Spong	02 ppm 8.8 Cond. 745 Temp(C) 16.0
Date Collected Received Tested	: 05/15/90 : 05/16/90 at: 950	100 pH 8.0 02 ppm 8.5 cond. 744
Type of Bioassay	SIATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	
Test Animal	: Rainbow trout	Temp(C) 16
Weight(gm) Length(mm) MODIALITY DATA	••••	Control pH 7.0 02 ppm 9.0 Cond. 54.
TEST ELAPS	ED TIME TOTAL	
	MORIALITY	
% 00:00 24:00	00:00 24:00 48:00 72:00 96:00	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
96 Hour LC50	: Non-lethal	
95% fid. limits	× 0.0 - 0.0 :	
Comments	: Non lethal; single concentration test	

8.4 9.6 548 14.5

7.9 9.1 541 16.0 15.0 14.5 14.0 14

SLOPE of Mortality Curve : LC50 Calculated By :

00:96	8.2 9.9 744 14.5	8.3 9.9 747 14.5	8.5 10.0 541 14.5
P S E D T I M E 00:00 24:00 48:00 72:00 96:00	14.0	14.0	14.0
T I M E	15.0 14.5	14.5	15.0 14.5 14.0
D T	15.0	15.0	15.0
00:00 24	8.0 8.8 742 16.0	8.0 8.8 742 16.0	7.9 9.1 541 16.0
ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	100	Control

MISA Trout

0000 × : STATIC (Protocol to determine the acute lethality of liquid effluents to fish, OME, 1983). : Single Concentration Test; non-lethal TOTAL MORTALITY Bay Water Intake, (500) BAR Grab S. Ha 06/18/90 06/19/90 at: 1110 00:00 24:00 48:00 72:00 96:00 0.0 : Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel : Rainbow trout 0000 ELAPSED TIME : Non-lethal 0000 0000 0000 Laboratory Sampling Method Sampled By Date Collected Received Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 0000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 100 Control Control Company CONC. TEST 34

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900496

TOXICITY TEST REPORT

00:96	8.1 9.2 749 15.5	7.9 8.6 750 15.5	8.5 9.3 536 15.5	8.4 9.1 539 15.5
72:00 \$	15.5	15.5	15.5	15.5
H E	16.0	16.0	16.0	16.0 15.5
	15.5	15.5	15.5	15.5
A P S E D	7.9 9.2 759 16.0	7.9 9.2 759 16.0	7.9 9.6 538 16.0	7.9 9.6 538 16.0
A L	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control
	TEST E L A P S E D T I M E CONC. x 00:00 24:00 48:00 72:00 96:00	ELAPSED TIME 00:00 24:00 48:00 72:00 9 02 ppm 7:9 02 ppm 7:9 02 ppm 7:59 Cond. 759 Temp(C) 16:0 15:5 16.0 15.5	E L A P S E D T I M E 00:00 24:00 48:00 72:00 9 02 ppm 9.2 Cond. 16.0 15.5 16.0 15.5 PH 7.9 02 ppm 9.2 Cond. 759 Cond. 16.0 15.5 16.0 15.5 Temp(C) 16.0 15.5 16.0 15.5	E L A P S E D T I M E 00:00 24:00 48:00 72:00 9 02 ppm 9:2 Cond. Temp(C) 16:0 15:5 16:0 15:5 Ol PH 7:9 Cond. Temp(C) 16:0 15:5 16:0 15:5 Ol PH 7:9 Cond. Temp(C) 16:0 15:5 16:0 15:5 Temp(C) 16:0 15:5 16:0 15:5 Temp(C) 16:0 15:5

TOXICITY TEST PARAMETERS

Sample: 03900623

TOXICITY TEST REPORT

teel Intake, (500) at: 1400 at: 1400 to determine the acute lethality effluents to fish. OME, 1983). out E MORTALITY 96:00 0 0 0 0

03900709
Sample:
REPORT
TEST
TOXICITY

		TOXICITY TEST REPORT	STR	EPORT	Sample:	Sample: 03900709
TEST CONDITIONS						
Сощрапу	**	Dofasco Hamilton, (ONT			
Region	** **	West Central Iron and Steel	al steel			
Control point	••	Bay Water Intake, (500)	Inta	ke, (500)		
Laboratory Sampling Method Sampled By Date Collected Received Tested	** ** ** ** ** **	BAR Grab S. Ha 08/20/90 08/21/90	at:	1615		
Type of Bioassay	0.0	: STATIC (Protocol of Liquid	to d	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	e acute le sh. OME,	thality 1983).
<pre>fest Animal Jeight(gm) Length(mm)</pre>	** ** **	Rainbow trout	out			

0000

0000

0000

0000

100 100 Control Control

: Single Concentration Test; non-lethal

% 0°0 - 0°0

95% fid. limits

Comments

: Non-lethal

96 Hour LC50

34

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

TEST CONC. ж

MORTALITY DATA

TOTAL

				00:96	8.1 9.6 587 16.0	8.0 9.7 588 16.0	8.3 9.5 537 16.0	8.3 9.6 533 16.0
				72:00 96:00	15.5	15.5	15.5	15.5
			I M E	48:00	15.5	15.5	15.5	15.5
			D T	24:00	5.5	15.5	15.5	15.5
ty Curve : By :	RAMETERS	03900709	LAPSE	00:00	8.1 9.1 59.1 16.0	8.1 9.1 591 16.0	7.8 9.2 544 16.0	7.8 9.2 544 16.0
SLOPE of Mortality LC50 Calculated By	TOXICITY TEST PARAMETERS	Number: 0	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)
SLOPE o LC50 Ca	TOXICIT	Sample	TEST	*	100	100	Control	Control

ж

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900818

TOXICITY TEST REPORT

		00:	8.0 9.0 577 15.5	8.1 9.2 581 15.5	8.4 9.0 5532 15.5	8.4 9.4 526
		96				0.01
		72:00	15.5	15.5	15.5	1
	TIME	48:00	15.5	15.5	15.5	1
		00:00 24:00 48:00 72:00 96:00	16.0	16.0	16.0	
3900818	ELAPSED	00:00	8.1 8.6 579 16.0	8.1 8.6 579 16.0	8.0 8.6 543 16.0	88.0
Sample Number: 03900818	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond.
Sample	TEST CONC.	><	100	100	Control	Control

MISA Trout

0000 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). : Single Concentration Test; Non lethal TOTAL MORTALITY : Bay Water Intake, (500) BAR Grab S. Ha 10/22/90 10/23/90 at: 1500 00:00 24:00 48:00 72:00 96:00 0.0 : Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel 0000 : Rainbow trout ELAPSED TIME : Non-lethal 0.0 0000 0000 0000 Laboratory Sampling Method Sampled By Date Collected Received Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 0000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 100 Control Company TEST CONC. 34

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900921

TOXICITY TEST REPORT

	00:96	7.9	14.0	8.0	552 14.0	10.0	14.0	9.4	14.0
	72:00		14.0		14.0		14.0		14.0
H	48:00		15.5		15.5		15.5		15.0 15.5 14.0
-	24:00		15.0		15.0		15.0		15.0
	00:00	8.0 9.3 552	15.5	9.3	552 15.5	7.9	15.5	8.0	15.5
EL		PH 02 ppm cond.	Temp(C)	pH 02 ppm	Cond. Temp(C)		Temp(C)	pH 02 ppm	Temp(C)
TEST	,	100		100		Control		Control	
	ELAPSED TIM	LAPSED TIM 00:00 24:00 48:0	ELAPSED TIME 00:00 24:00 72:00 9 02 ppm 8.0 02 ppm 9.3 cond.	PH O2 ppm Cond.	ELAPSED TIME 00:00 24:00 48:00 72:00 9 02 ppm 02 ppm 552 Cond. Temp(C) 15.5 15.0 15.5 14.0 pH 8.0 02 ppm 9:3	ELAPSED TIME 00:00 24:00 48:00 72:00 9 02 ppm 9.3 Cond. 15.5 15.0 15.5 14.0 DH 8.0 02 ppm 9.3 Cond. 15.5 15.0 15.5 14.0	DH 8.0 72:00 9 00:00 24:00 48:00 72:00 9 02 ppm 9.3 Cond. 15.5 15.0 15.5 14.0 02 ppm 8.0 02 ppm 8.0 03 ppm 8.0 04 ph 8.0 05 ppm 8.0 06 ppm 8.0 07.9 06 ph 8.0 07.9 06 ppm 8.7 07.9 06 ppm 8.7	ELAPSED TIME 00:00 24:00 48:00 72:00 9 02 ppm 9.3 Cond. 15.5 15.0 15.5 14.0 DH 8.0 Cond. 552 Temp(C) 15.5 15.0 15.5 14.0 ol pH 7.9 Cond. 15.5 15.0 15.5 14.0 cond. 15.5 15.0 15.5 14.0	ELAPSED TIME 00:00 24:00 48:00 72:00 9 02 ppm 9.3 Cond. 15.5 15.0 15.5 14.0 DH 8.0 Cond. 15.5 15.0 15.5 14.0 ol pH 7.9 Cond. 15.5 15.0 15.5 14.0 ol pH 8.0 Ol pm 8.7 cond. 15.5 15.0 15.5 14.0 ol pH 8.0 Ol ph 8.7 cond. 15.5 15.0 15.5 14.0

	Sample Number: 03900060	. 00:00 24:00 48:00 72:00 96:00		pH 8.0 02 ppm 9.8 50nd, 660 Temp(C) 15.0 14.5 14.5 14.5	pH 8.0 8.3 02 ppm 9.5 9.2 Cond. 613 617	Temp(C) 15.0 14.5 14.5 14.5 14.5 PH 8.0	Cond. 592 583 583 Temp(C) 15.0 14.5 14.5 14.5 14.5	pH 8.0 02 ppm 9.2 Cond. 569	Temp(C) 15.0 14.5 14.5 14.5 1	02 ppm 9.2 8.9 Cond. 558 552 Temp(C) 15.0 14.5 14.5 14.5	8.0 8.9 550 15.0 14.5 14.5 14.5		. 5.41 6.41 6.41			
TEST CONDITIONS	Dofasco Hamilton, ONT (146,005)	٠	Control point : Boiler House Sewer #2, (1200)	Laboratory BAR Sampling Method Grab Sampled By S. Ha Date Collected 01/23/00	• ••	Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	<pre>fest Animal : Rainbow trout Weight(gm) : langth(rms) :</pre>	ATA	TEST ELAPSED TIME TOTAL HORTALITY 10	x 00:00 24:00 48:00 72:00 96:00	100 65 65 60 60 60 60 60 60 60 60 60 60 60 60 60	ontrol 0 0 0 0 0	96 Hour LC50 : Non-lethal	95% fid. limits : 0.0 - 0.0 \times	Comments : Non-lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900060

TOXICITY TEST REPORT

TEST CONDITIONS					0.00
Company :	Dofasco Hamilton, ONT (1460005) West Central Iron and Steel		Sample TEST CONC.	Sample Number: UsyUUSUS TEST E L A P S CONC. 00:	03900303 E L A P S E 00:00
Control point : Laboratory Sampling Method : Sampled By :	Boiler House Sewer #2, (1200) BAR Grab S. Ha	(1200)	100	pH 02 ppm Cond. Temp(C)	8.3 758 15.0
			99	pH 02 ppm cond. Temp(C)	8.8 9.5 703
Type of Bloassay :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	the acute lethality fish. OME, 1983).	07	pH 02 ppm Cond.	8.67 87.67
Test Alimat Weight(gm) : Length(mm) : MORTALITY_DATA			20	pH 02 ppm Cond. Temp(C)	8.1 65.7 7.0 7.0 7.0
CONC. E L A P S E	ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	TOTAL MORTALITY	10	pH 02 ppm Cond.	9.1
	0000	0000	iv.	pH 02 ppm Cond. Temp(C)	8.0 9.1 15.0
o o o o o o o o o o o o o o o o o o o	000	000	Control pH 02 02 Col	pH O2 ppm Cond. Temp(C)	7.9 9.0 550 15.0
96 Hour LC50 : 95% fid. limits :	Non-lethal 0.0 - 0.0 %				
Comments	: non lethal				

TOXICITY TEST PARAMETERS

	00:96	8.3 9.4 761 14.5	8.3 9.3 708 14.5	8.3 9.4 681 14.5	8.4 9.3 660 14.5	8.4 9.3 632 14.5	8.4 9.2 611 14.5	8.4 9.4 558 14.5
	48:00 72:00 96:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
I M E	48:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
D 1	24:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
APSE	00:00	8.3 9.9 758 15.0	8.2 9.5 703 15.0	8.2 9.2 678 15.0	8.1 9.2 651 15.0	8.0 9.1 628 15.0	8.0 9.1 601 15.0	7.9 9.0 550 15.0
EL		pH 02 ppm Cond. Temp(C)	l pH O2 ppm Cond. Temp(C)					
TEST	× ×	100	99	07	20	10	ī	Control

TOXICITY TEST PARAMETERS

Sample: 01900110

TOXICITY TEST REPORT

TEST CONDITIONS

Sample Number: 01900110

Сопрапу	: Dofasco Hamilton, ONT		TEST	FLA	PSFDTI	ш				
	(1460005)		CONC.	J	-	,				
Region Industry	: West Central : Iron and Steel		3 4		00:00 00:30 01:0	01:00 02:00 24:00 48:00 72:00 96:00	24:00	48:00	72:00	00:90
Control point	: Boiler House Sewer #2, (1200)	(1200)		111	, ,	1	6		1	6
Laboratory Sampling Method Sampled By	: MOE : Grab : M. Smithson			pn 02 ppm Cond. Temp(C)	7.5 635 15.0	9.4 560 15.0	9.6 700 15.0	9.6 690 15.0	8.6 580 15.0	9.4 560 15.0
Received Tested	: 06/15/90 at: 1000		65	pH 02 ppm Cond.		7.8 8.4 460	9.6	7.9	7.8 8.6 475	7.9
Type of Bioassay		the acute lethality fish. OME, 1983).	07	pH 02 ppm cond.		7.8	7.9	7.9	7.9	7.9
lest Animal Weight(gm) Length(mm)	Kainbow trout		30	PH 02 ppm		7.8	7.8	7.9	7.8	7.9
MORTALITY DATA				Temp(C)		15.0	15.0	15.0	15.0	15.0
TEST E L A P CONC.	SED TIME	TOTAL MORTALITY	° 50	02 ppm		7.9	7.8	7.8	7.9	9.6
× 00:00 00:	00:30 01:00 02:00 24:00 48:00	72:00 96:00 %		Temp(C)		15.0	15.0	15.0	15.0	15.0
40 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	0	pH 02 ppm cond. Temp(C)		7.8 9.4 300 15.0	7.7 9.6 375 15.0	7.9 9.7 395 15.0	7.9 8.6 305 15.0	7.9 9.4 295 15.0
o o o o o o o o o o o o o o o o o o o	000	000	Control	pH 02 ppm Cond. Temp(C)		7.8 9.4 275 15.0	7.9 9.6 330 15.0	7.8 9.6 335 15.0	7.9 8.7 270 15.0	7.9 9.4 265 15.0
96 Hour LC50	Non-lethal									
95% fid. limits Comments	: NISA Audit: Non-lethal									
						;				

TOXICITY TEST PARAMETERS

Sample: 03900624

TOXICITY TEST REPORT

00:96 00:

8.0 9.6 633 14.0

8.0 8.7 600 14.0

8.2 9.0 574 14.0

8.1 9.1 553 14.0

8.4 9.5 538 14.0

8.4 9.2 532 14.0

8.4 9.5 524 14.0

/ / / / / / / / / / / / / / / / / / /	TEST E LAPSED	CONC. X 00:00 24:00 48:00 72:00 96		100 pH 8.0 02 ppm 9.7 Cond, 630 Temp(C) 15.5 15.0	65 pH 7.9 02 ppm 9.6 Cond. 596 Tomor(C) 15 5 15 0	05 pre 7 pre 7.9	Lond. Temp(C)	7.9	()	TOTAL 10 pH 7.8 MORTALITY 9.5	x Temp(C) 15.5 15.0	5 pH 7.8 0 02 ppm 9.4 0 0 0.4 0 541 0 Temp(C) 15.5 15.0	Control pH 7.8 0 02 ppm 9.4 Cond. 539 Temp(C) 15.5 15.0			
	: Dofasco Hamilton, ONT	(1460005) : West Central : Iron and Steel	: Boiler House Sewer #2, (1200)		: 07/25/90 : 07/25/90 at: 1420	: STAIIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	: Rainbow trout	• ••		SED TIME	00 48:00 72:00 96:00	00000	000	: Non-lethal	: 0.0 - 0.0 %	
TEST CONDITIONS	Сопрапу	Region Industry	Control point	Laboratory Sampling Method Sampled By	Received Tested	Type of Bioassay	Test Animat	Length(mm)	MORTALITY DATA	TEST E L A P	00:00 24:00 48:00	100 0 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0	trol 0	96 Hour LC50	95% fid. limits	

TOXICITY TEST PARAMETERS

00:90	8.1 9.9 546 14.0	8.2 9.9 545 14.0	8.2 9.6 544 14.0	8.3 9.8 541 14.0	8.2 9.5 542 14.0	8.5 10.0 533 14.0	8.4 9.8 537 14.0
2:00 8	14.0	14.0	14.0	14.0	14.0	14.0	14.0
8:00 7	15.5	15.5	15.5	15.5	15.5	15.5	15.5
7 00:57	15.0	15.0	15.0	15.0	15.0	15.0	15.0
00:00 24:00 48:00 72:00 96:00	8.1 9.5 546 15.5	8.0 9.3 546 15.5	8.0 9.2 546 15.5	7.9 8.9 547 15.5	7.9 8.7 547 15.5	7.9 8.7 548 15.5	7.9 8.9 548 15.5
	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
CONC.	100	9	07	20	10	Ŋ	Control

COMPANY: Dofasco, Hamilton

(1460005)

SECTOR: Iron and Steel REGION: West Central

SUMMARY

Data for 50 Daphnia magna acute lethality toxicity tests conducted on samples of effluent from six different discharge points collected between November 1989 and September 1990 were submitted by Dofasco of Hamilton. Toxicity was random and variable for all outfalls.

Dofasco voluntarily submitted data for toxicity tests conducted on samples of intake water (500). All samples were either nonlethal to Daphnia, or had LC50s > 100%.

The three samples for boiler house #1 (300) had LC50s > 100% as did the Ministry audit sample. Two samples from boiler house sewer #2 (1200) were not acutely lethal to Daphnia and the other two samples had LC50s > 100%.

Eight of eleven samples from the east boat slip sewer were not acutely lethal to Daphnia, and two samples had LC50s > 100%. The sample collected in December was lethal to Daphnia with a 48 h LC50 = 62%. The Ministry audit sample tested in June was non-lethal.

Eight of eleven samples from the west bay front sewer (400) were not acutely lethal to Daphnia. One sample had an LC50 > 100 %, and two samples exhibited an unusual toxic response in which the greatest number of mortalities occurred in the middle concentrations of effluent. The Ministry audit sample tested in June had an 48 h LC50 > 100%.

Seven of eleven samples from the Ottawa street sewer (200) were not acutely lethal to Daphnia, as was the Ministry audit. Two samples had LC50s > 100% and two samples induced an unusual toxic response in which the greatest number of mortalities occurred in the middle concentrations of effluent.

East Boat Slip Sewer

03890285 sampled: 11/20/89 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03890329 sampled: 12/12/89 LC50: 61.5 % 95% fid. limits: 41.7 - 122.5 % slope: 2.5

comments:

03900061 sampled: 01/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

Dofasco (continued)

03900123 sampled: 02/20/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900206 sampled: 03/19/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900302 sampled: 04/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900388 sampled: 05/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

02900109 sampled: 06/13/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900493 sampled: 06/18/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900619 sampled: 07/23/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900706 sampled: 08/20/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900815 sampled: 09/17/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900917 sampled: 10/22/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non lethal

Ottawa Street Sewer

03890284 sampled: 11/20/89 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

03890332 sampled: 12/12/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

Dofasco (continued)

03890333 sampled: 12/12/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03900057 sampled: 01/22/90 LC50 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100

900124 sampled: 02/20/90 non-lethal 95% fid. limits: 0.0 - 0.0 % 03900124 sampled: 02/20/90

comments: Non-lethal

03900207 sampled: 03/19/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900301 sampled: 04/16/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

900389 sampled: 05/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 % 03900389 sampled: 05/14/90

comments: Non lethal

02900107 sampled: 06/12/90 non-lethal

95% fid. limits: 0.0 - 0.0%

comments: MISA Audit; Non-lethal; Some Floaters

03900494 sampled: 06/18/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900620 sampled: 07/23/90 LC50: 95% fid. limits: 0.0 - 0.0 % >100 %

comments: LC50 >100

03900707 sampled: 08/20/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

non-0.0 % 03900816 sampled: 09/17/90 non-lethal

95% fid. limits: 0.0 -

comments: Non-lethal

03900918 sampled: 10/22/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

Dofasco (continued)

Boiler House Sewer #1

03900058 sampled: 01/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 >100

03900300 sampled: 04/16/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

02900111 sampled: 06/13/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

02900130 sampled: 06/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA Audit

03900621 sampled: 07/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 >100

03900919 sampled: 10/22/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 >100

West Bay Front Sewer

03890283 sampled: 11/20/89 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Non-lethal

03890330 sampled: 12/12/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 >100%

03900056 sampled: 01/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 >100

03900125 sampled: 02/20/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Non-lethal

03900208 sampled: 03/19/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Non lethal

03900299 sampled: 04/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Non-lethal

Dofasco (continued)

03900390 sampled: 05/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

02900112 sampled: 06/13/90 LC50 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: MISA Audit

03900495 sampled: 06/18/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900622 sampled: 07/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900708 sampled: 08/20/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900817 sampled: 09/17/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900920 sampled: 10/22/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

Bay Water Intake

03890282 sampled: 11/20/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03890331 sampled: 12/12/89 nonnon-lethal

comments: Non-lethal

03900059 sampled: 01/23/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900126 sampled: 02/20/90 non-lethal

0.0 - 0.0 % 95% fid. limits:

comments: Non-lethal

03900205 sampled: 03/19/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

Dofasco (continued)

03900298 sampled: 04/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900391 sampled: 05/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900496 sampled: 06/18/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900623 sampled: 07/23/90 LC50 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100

03900709 sampled: 08/20/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900818 sampled: 09/17/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900921 sampled: 10/22/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non lethal

Coke Plant Bio Disch

Blast Furnace Blwdwn

Steel Clarifier Disch

Cold Mill Sewer

#1 Hot Mill Discharge

Boiler House Sewer #2

LC50: >100 % 03900060 sampled: 01/23/90

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900303 sampled: 04/16/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

02900110 sampled: 06/13/90 non-lethal

0.0 - 0.0 % 95% fid. limits: comments: MISA Audit; Non-lethal

Dofasco (continued)

03900624 sampled: 07/23/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 % comments: LC50 >100

03900922 sampled: 10/22/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

SE Coal Fields Sewer

Kenilworth

Rain Gauge

00000 Sample: 03890285 : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) TOTAL MORTALITY East Boat Slip Sewer, (100) S. Ha 11/20/89 11/21/89 11/21/89 at: 1510 TOXICITY TEST REPORT 0.0 : Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel TIME 00:00 04:00 24:00 48:00 : LC50 >100% : D. magna 00000 0.0 : >100% BAR Grab ELAPSED 00000 Laboratory Sampled By Date Collected Received Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 48 Hour LC50 000000 Test Animal Weight(gm) Length(mm) Region Comments Company Control TEST CONC. 34

		48:00	8.4 8.6 305 20.0	8.4 8.7 330 20.0	8.8 8.8 350 20.0	8.3 8.7 379 20.0	8.5 8.5 444 20.0	8.0 8.1 577 20.0
	ME	24:00 48:00	19.5	19.5	19.5	19.5	19.5	19.5
	T 0	00:00	20.0	20.0	20.0	20.0	20.0	20.0
3890285	LAPSE	00:00	8.5 9.4 303 20.0	8.5 9.4 326 20.0	8.5 9.1 342 20.0	8.5 9.6 373 20.0	8.4 9.5 441 20.0	8.1 9.4 578 20.0
Sample Number: 03890285	ш		pH 02 ppm Cond. Temp(C)					
Sample	TEST	***	Control	•	13	52	20	100

SLOPE of Mortality Curve : 2.5 LC50 Calculated By : Probit.

TOXICITY TEST PARAMETERS

TIME ELAPSED Sample Number: 03890329

00:00 24:00 48:00

8.4 9.0 344 19.5 8.2 9.0 320 19.5 8.7 8.7 618 19.5 8.3 9.0 458 19.5 8.4 9.2 378 19.5 20.0 20.0 20.0 20.0 20.0 8.5 9.1 456 19.5 8.8 375 19.5 8.5 339 19.5 8.7 317 19.5 02 ppm Cond. Temp(C) Cond. Temp(C) Cond. Temp(C) Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm cond. Temp(C) pH 02 ppm pH 02 ppm pH 02 ppm Control

20.0

Сотрапу					
Region Industry	Dofasco Hamilton, ONT (1460005) West Central : Iron and Steel		Sample TEST CONC.	e Number:	03900061 E L A P S E 00:00
Control point Laboratory Sampling Method Sampled By	: East Boat Slip Sewer, (100) : BAR : Grab : S. Ha	Sewer, (100)	100	pH O2 ppm Cond. Temp(C)	8.0
Date Collected Received Tested	01/25/90 01/25/90 01/26/90 at:	1630	05	pH 02 ppm Cond. Temp(C)	8.2 8.9 475 20.0
Type of Bloassay	(Daphnia magna Test Protocol.	Static (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm Cond.	8.8
Test Animal Weight(gm) Length(mm)	. D. magna		13		20.0 8.8 348
MORTALITY DATA TEST E L A P S CONC.	SED TIME	TOTAL MORTALITY	9		20.0
x 00:00 24:00 48:00	48:00	×	×	Cond. Temp(C)	324 20.0
100 0 0 50 0 0 25 0 0 13 0 0 6 0 0	00000		Control	rol pH 02 ppm Cond. Temp(C)	8.8 299 20.0
48 Hour LC50 95% fid. limits	: Non-lethal : 0.0 - 0.0	34			
Comments	: Non lethal				

8.4 389 20.5

8.8 390 20.0

19.0

8.3 478 20.5

8.2 4.75 20.0

19.0

19.0

8.0 9.2 20.0

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

00:00 24:00 48:00

8.5 347 20.5

8.8 348 20.0

19.0

8.5 322 20.5

8.4 8.8 324 20.0

19.0

19.0

8.3 8.4 519 20.0

8.4 8.5 414 20.0

8.5 362 20.0

8.4 8.5 335 20.0

ж

	TOXICITY TEST REPORT	Sample: 03900206
TEST CONDITIONS		
Сощрапу	: Dofasco Hamilton, ONT (1460005)	
Region Industry	: West Central : Iron and Steel	
Control point	: East Boat Slip Sewer, ((100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab D. Spong 03/19/90 03/20/90 at: 1610	
Type of Bioassay	: STATIC (Daphnia magna Acute Le Test Protocol. OME, 190	Lethality Toxicity 1988)
fest Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
TEST E L A P S CONC.	SED TIME	TOTAL MORTALITY
x 00:00 24:00	0 48:00	×
100 0 0 50 0 0 25 0 0 0 13 0 0 6 Control 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	* 0.0 - 0.0 :	
Comments	: Non lethal	

TOXICITY TEST PARAMETERS

8.0 8.2 733 20.0	8.1 8.4 517 20.0	8.2 8.5 408 20.0	8.2 8.5 357 20.0	8.3 8.6 333 20.0	8.3 300 20.0
20.0	20.0	20.0	20.0	20.0	20.0
8.2 8.9 749 21.0	8.3 8.7 526 21.0	8.4 8.7 413 21.0	8.4 8.6 358 21.0	8.5 8.7 325 21.0	8.5 8.6 21.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
100	50	25	13	9	Control

TEST CONDITIONS		1 0	Sample Number: 03900302	00302
Company : Dofi Ham (144 Region : West	Dofasco Hamilton, ONI (1460005) West Central		TEST E L	E L A P S E 00:00
	East Boat Slip Sewer, (100) BAR Grab S. Ha		100 pH 02 ppm Cond. Temp(C)	8.1 9.0 741 19.0
Date Collected : 04/ Received : 04/ Tested : 04/	04/16/90 04/17/90 04/18/90 at: 935		50 pH OZ ppm Cond.	8.2 9.0 530 19.0
	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)		25 pH 02 ppm Cond.	8.3 9.0 416 19.0
AT A			13 pH 02 ppm cond. Temp(C)	8.4 8.9 362 19.0
TEST E L A P S E D CONC. \$ 00:00 24:00 48:00	T I M E MORTALITY	34	6 pH 02 ppm Cond. Temp(C)	8.4 8.9 335 19.0
ntrol		00008	Control pH 02 ppm Cond. Temp(C)	8.90.91 19.00
48 Hour LC50 : No 95% fid. limits : 0 Comments : Non	: Non-lethal : 0.0 - 0.0 % : Non-lethal			

8.4 8.6 306 19.5

20.02

8.3 9.1 335 19.5

8.4 8.9 335 19.0

20.02

8.3 9.0 365 19.5

8.4 8.9 362 19.0

20.02

20.02

88.37 7522 7524 7534 7534 76.50 76.50 76.50 76.50

8.1 741 19.0 530 19.0 19.0

20.0

20.02

ELAPSED TIME

00:00 24:00 48:00

MISA Daphnia

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900388

TOXICITY TEST REPORT

a to the	ONT al steel	Sample Number: 03900388	48:00 72.4 72.4 72.4 72.4 19.0 19.0 19.0 19.0 19.0 19.0 19.0	19.0 19.0 19.0 19.0	88.0 8.0 8.0 8.0 8.1 726 20.0 20.0 20.0 8.3 8.3 8.3 8.3 8.3 8.3 8.3 8.3	ph O2 par Cond. Temp(Cond. Temp(C	AL 1TY %	at teel Slip Sewer, (100) at: 1000 at: 1000 col. OME, 1988)	Dofasco Hamilton, ONT (1460005) Hawilton, ONT (1460005) Hest Central Hest Central Feast Boat Stip Grab Dos Spong 05/14/90 05/14/90 05/15/9
n-tethal	Boat Slip Sewer, (100) 100 pH 8.0 2 pam 8.4 1,706 1,706 1,706 1,706 1,707 1,70	TEST ELAPSED TITEST Steel Stip Sewer, (100) 100 pH 8.0 02 ppm 8.7 100 pH 8.0 02 ppm 8.7 100 pH 8.7 100 pH 8.1 100 pH 9.1 100 pH							
	100 pH 8.0 1.00	TEST ELAPSED TITE Steel Steel Stip Sewer, (100) at: 1000 At:						_	Non-tetha
	100 pH 8.0 1.00 1.00 pH 8.0 1.00	TEST ELAPSED TITEST Steel Stip Sewer, (100) at: 1000 at: 1000 at: 1000 at: 1000 at: 1000 At: 1988) HE MORTALITY Cond. Cond. At PED TITEST CONG. Cond. At PED TITEST CONG. At PED TITEST CONG. At PED TITEST CONG. At PED TITEST CONG. At PED TITES							on-letha
lella!	100 pH 8.0 1726	Stip Sewer, (100) Stip Sewer, (100) 100 pH 8.0 100 pH 8.1 100 pH 8.2 100 pm 8.2 100 pm 8.3 100							9
	Boat Slip Sewer, (100) 100 pH 8.0 22 ppm 8.726 1,900 2,900 2,900 5,900 100 100 100 100 100 100 100	TEST ELAPSED TI Steel Steel Steel Steel Stip Sewer, (100) 100 pH 8.0 Cond. 726 Cond. 726 Temp(C) 20.0 19.0 19.0					1		
	at: 1000 at: 1000 at: 1000 magna Acute Lethality Toxicity cocl. OME, 1988) M E MORTALITY Cond. 50, 0 13 pH 8.7 Cond. 726 1400 1500 1500 1600 1700 1700 1800 1800 190	TEST ELAPSED TI CONC. Trail Steel S			20.0	Temp(C)	000		
	Boat Stip Sewer, (100) 100 pH 8.0 126 pcm 8.726 14,90 15726 1570 pcm 8.7 1570 pcm 9.7 1570 pc	TEST ELAPSED TI CONC. \$ Steel Steel Steel Steel Steel Steel Steel 100 pH 8.0 200 pm 8.7 Cond. Temp(C) 20.0 19.0 19.0 Temp(C) 20.0 19.0 19.0 Temp(C) 20.0 Temp(C) 20			8.3 8.7 294 20.0		0000		
Control pH 8.3 02 ppm 8.7 Cond. 294 Temp(C) 20.0 19.0	at: 1000 At: 10	TEST ELAPSED TI CONC. Steel			20.0	Temp(C)	24		00
Control pH 8.3 0 Control pH 8.7 0 Cond. 294 0 Temp(C) 20.0 19.0	at: 1000 at: 10	TEST ELAPSED TI CONC. \$ steel Stee	9.0		88.8		AL ITY	ш	-
TIME TOTAL 8.3 MORTALITY 2.0 ppm 8.8 Cond. 319 Cond. 20.0 19.0 Control pH 8.3 Cond. 294 Cond. 294 Cond. 294 Cond. 20.0 19.0	at: 1000 at: 1000 at: 1000 at: 1000 at: 1000 at: 1000 at: 1988) at: 1988)	TEST ELAPSED TI CONC. X CONC. X 00:00 24:00 46 Steel	8.2 8.9 351 19.0		8.2 8.8 353 20.0				
13 pH 8.2 02 ppm 8.8 100d. 20.0 19.0 11 M E TOTAL MORTALITY	at: 1000 Slip Sewer, (100) 100 pH 8.0 02 ppm 8.4 726 Temp(C) 20.0 19.0 8.1 50 pH 8.1 Cond. 756 19.0 19.0	TEST ELAPSED TI CONC. Steel Steel Steel Stip Sewer, (100) 100 pH 8.0 Cond. 726 Temp(C) 20.0 19.0 8.1 Cond. 50 pH 8.1 Cond. 50 pH 8.1 Cond. 50 pH 8.7 Cond. 516 Temp(C) 20.0 19.0	8.3 8.4 405 19.0		8.1 8.7 407 20.0		xicity	agna Acute Lethality Tox col. OME, 1988)	aphnia m st Proto magna
TIME MORTALITY TIME Cond. 13	100 pH 8.0 02 ppm 8.4 Cond. 726 Temp(C) 20.0 19.0	TEST E L A P S E D T I CONC. % 00:00 24:00 48 Steel 100 pH 8.0	88.2 511 19.0		8.7 8.7 516 20.0			9	
50 pH 8.1 6/90 at: 1000 10 11 12 13 pH 8.7 14 E MORTALITY 25 pm 8.7 15 pm 8.7 16 cond. 17 IM E MORTALITY 26 pm 8.7 18 pm 8.7 19 pm 8.8 10 pm	Slip Sewer, (100)	ONT TEST E LAPSED TI CONC. % 00:00 24:00 48 Stip Sewer, (100)	7.9 7.7 19.0		8.4 726 20.0				Spong
TIME HORRALITY To ME, 1989 TIME HORRALITY To ME, 1980 To ME, 1980 To ME, 1988		ONT TEST E L A CONC.	0		0			Slip Sewer, (100)	st Boat

TOXICITY TEST PARAMETERS

00:00 01:00 02:00 04:00 24:00 48:00

ELAPSED TIME

7.8	7.9	7.8	7.6	7.8	7.7
8.4	8.4	8.4	8.5	8.5	8.4
655	515	415	365	325	280
20.0	20.0	20.0	20.0	20.0	20.0
7.7	7.7	7.9	7.9	7.9	7.8
8.5	8.8	8.9	8.8	8.8	8.8
650	520	410	360	325	275
20.0	20.0	20.0	20.0	20.0	20.0
pH	pH	pH	pH	pH	ol pH
O2 ppm	02 ppm				
Cond.	Cond.	Cond.	cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	09	30	15	in .	

		TOXICITY TEST REPORT	EST R	PORT	Sample: 03900493	
TEST CONDITIONS						
Сощрапу		Dofasco Hamilton,	ONT			
Region Industry	** **	West Central Iron and Ste	Steel			
Control point	**	East Boat	Stip	Sewer, (100)	(100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	** ** ** ** ** **	BAR Grab S. Ha 06/18/90 06/19/90	at:	1040		
Type of Bioassay	**	STATIC (Daphnia magna Test Protocol.	magna ocoi.	Acute OME,	Lethality Toxicity 1988)	
Test Animal Weight(gm) Length(mm)	** ** **	D. magna				
MORTALITY DATA						
TEST E L A P CONC.	S	E D T 1	ш		TOTAL	
x 00:00 24:0	00	24:00 48:00			3 4	
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-00000			x 00000	
48 Hour LC50		>100%				
95% fid. limits	**	0.0	0.0	8		
Comments	••	LC50 >100				

	1 M E	7.8 8.2 714 20.5	8.0 8.6 514 20.5	8.1 8.7 417 20.5	8.1 366 20.5	8.2 8.7 339 20.5	8.1 8.6 313 20.5
	D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
900493	A P S E 00:00	7.8 8.4 735 20.0	8.0 8.8 522 20.0	8.1 8.9 422 20.0	8.1 9.0 368 20.0	8.1 9.0 341 20.0	8.1 9.0 314 20.0
Sample Number: 03900493	n L	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	L pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	25	13	•	Control

TOXICITY TEST PARAMETERS

Sample: 03900619

TOXICITY TEST REPORT

Sample Number: 03900619

1 M E	8.0 8.0 627 20.5	8.3 465 20.5	8.2 8.5 383 20.5	8.2 8.5 346 20.5	8.3 8.7 320 20.5	8.3 8.6 302 20.5
D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
00:00	8.0 8.7 637 20.5	8.1 9.0 470 20.5	8.3 9.1 388 20.5	8.3 9.1 348 20.5	8.2 9.2 323 20.5	8.3 9.2 300 20.5
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	ol pH O2 ppm Cond. Temp(C)
TEST CONC.	100	20	25	13	•	Control

	TOXICITY TEST REPORT	Sample: 03900706
TEST CONDITIONS		
Company	: Dofesco Hamilton, ONT (1460005) : West Central	
Industry	Iron	
Control point	: East Boat Slip Sewer, (100)	(100)
Laboratory Sampling Method Sampled By Date Collected Received	: BAR : Grab : S. Ha : 08/20/90 : 08/21/90 : 08/21/90 at: 1450	
Type of Bioassay	: STATIC (Daphnia magna Acute Le Test Protocol. OME, 19	Lethality Toxicity 1988)
Test Animal Weight(gm) Length(mm)	: D, magna	
MORTALITY DATA		
TEST E L A P CONC.	SED TIME	TOTAL MORTALITY
x 00:00 54:0	24:00 48:00	×
100 0 0 50 0 0 25 0 0 0 13 0 0 0 6 Control 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	* 0.0 - 0.0 :	
Comments	: Non lethal	

	I M E	8.1 8.1 577 21.0	8.2 8.3 442 21.0	8.3 8.4 374 21.0	8.4 8.5 339 21.0	8.4 8.5 321 21.0	8.4 8.5 302 21.0
	D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
3900706	L A P S E 00:00	8.1 8.6 572 21.0	8.2 8.7 438 21.0	8.3 8.7 371 21.0	8.3 8.7 337 21.0	8.3 8.7 320 21.0	8.3 8.8 301 21.0
Sample Number: 03900706	ш ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	52	13	•	Control

I M E	00:04	8.0 8.2 579 20.5	8.2 8.4 439 20.5	8.2 8.5 373 20.5	8.2 8.6 340 20.5	8.3 3.6 20.5	8.2 8.6 304 20.5
H 9	00:4	19.5	19.5	19.5	19.5	19.5	19.5
≪	00:00	8.3 8.7 572 21.0	8.4 8.8 435 21.0	8.8 370 21.0	8.5 8.9 337 21.0	8.9 8.9 317 21.0	8.8 302 21.0
EL		pH 02 ppm cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
TEST CONC.	e	100	20	52	13	•	Control

MISA Daphnia

	TOXICITY TEST REPORT	Sample: 03900917
TEST CONDITIONS		
Company	: Dofasco Hamilton, ONT	
Region	: West Central : Iron and Steel	
Control point	: East Boat Slip Sewer,	r, (100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Ha : 10/22/90 : 10/23/90 at: 1455	
Type of Bioassay	: STATIC (Daphnia magna Acute Test Protocol. DME,	e Lethality Toxicity , 1988)
Test Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
CONC.	SED TIME	TOTAL MORTALITY
x 00:00 24:00 48:00	00 48:00	**
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	: 0.0 - 0.0 :	
Comments	: Non lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

	TIME	8
	2	80
	2000	4
	-	00:00 24:00 48:00
	0	24
	ELAPSED	00
17	S	0
60	0	0
90	~	
03	_	
	ш	
Sample Number: 03900917		
Sample	TEST	, X

8.1	8.2	8.3	8.3	8.3	8.3
8.5	8.6	8.7	8.8	8.6	8.4
537	4.18	356	328	310	296
20.5	20.5	20.5	20.5	20.5	20.5
20.5	20.5	20.5	20.5	20.5	20.5
8.1	8.3	8.3	8.4	8.4	8.4
9.0	9.0	9.0	9.0	9.0	9.0
531	417	356	328	311	297
21.0	21.0	21.0	21.0	21.0	21.0
pH	pH	pH	pH	pH	l pH
02 ppm	O2 ppm	O2 ppm	O2 ppm	02 ppm	02 ppm
cond.	Cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	52	13	9	Control

Control point

Industry

Region

Company

Test Animal Weight(gm) Length(mm)

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03890284

8.1 8.6 629 20.0 8.4 9.4 352 20.0 8.3 9.2 389 20.0 8.3 8.9 468 20.0 00:00 04:00 24:00 48:00 19.5 19.5 19.5 19.5 19.5 ELAPSED TIME 20.0 20.02 20.0 20.02 20.0 8.3 463 20.0 8.8 8.8 641 20.0 8.4 9.2 385 20.0 8.5 9.4 303 20.0 8.6 9.3 328 20.0 8.5 9.2 349 20.0 pH 02 ppm Cond. Temp(C) Cond. Temp(C) Temp(C) pH 02 ppm 02 ppm Cond. E2 Control TEST CONC. 25 20 100 9 13

19.5

20.02

48 Hour LC50

Comments

000000

6 25 50 100

Control

34

TEST CONC.

	-	TOXICITY TEST REPORT	Sample: 03890332
TEST CONDITIONS			
Сомрапу	**	Dofasco Hemilton, ONT (1440005)	
Region Industry	** **	West Central Iron and Steel	
Control point	**	Ottawa Street Sewer, (200)	
Laboratory Sampling Method Sampled By Date Collected Received Tested		BAR Grab D. Spong 12/12/89 12/13/89 at: 1055	
Type of Bioassay	••	STATIC (Daphnia magna Acute Letha Test Protocol. OME, 1988)	Lethality Toxicity 1988)
Test Animal Weight(gm) Length(mm)	** ** **	D. magna	
MORTALITY DATA			
TEST E L A P CONC.	S	ED TIME	TOTAL MORTALITY
x 00:00 24:00	7 00	48:00	ж
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0		00000	00000
48 Hour LC50	••	Non-lethal	
95% fid. limits	••	x 0.0 - 0.0	

: Non-lethal

Comments

SLOPE of Mortality Curve : LC50 Calculated By :

	1 M E	8.1 8.8 624 19.5	8.3 8.9 463 19.5	8.4 8.9 382 19.5	8.4 8.9 346 19.5	8.4 8.9 321 19.5	8.4 9.3 302 19.5
	D T 1	20.0	20.0	20.0	20.0	20.0	20.0
890332	A P S E	7.9 632 19.5	8.3 9.0 469 19.5	8.5 8.8 386 19.5	8.6 347 19.5	8.8 323 19.5	8.8 8.7 296 19.5
Sample Number: 03890332	n L	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	25	13	9	Control

	TOXICITY TEST REPORT	TEST RE	PORT	Sample: 03890333	390333	TOXICIT
TEST CONDITIONS						
Company	: Dofasco Hamilton	ONT				Sample
Region Industry	: West Central : Iron and Steel	tral Steel				**************************************
Control point	: Ottawa Street	treet S	Sewer, (200)	(200)		
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : D. Spong : 12/12/89 : 12/13/89	۵ ۲	1145			20
Type of Bioassay	: STATIC (Daphnia magna Acute Test Protocol. OME,	magna tocol.	Acute OME,	Lethality Toxicity 1988)	٨,	25
Test Animal Weight(gm) Length(mm)	. D. magna					13
MORTALITY DATA						
TEST E L A P CONC.	SED TI	ш		TOTAL		9
% 00:00 24:00	00 48:00				ж	
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000				020000	Control
48 Hour LC50	* >100%					
95% fid. limits	. 0.0 :	0.0	34			
Comments	: LC50 >100%	×				

TOXICITY TEST PARAMETERS

Sample Number: 03890333

00:00 24:00 48:00

ELAPSED TIME

8.1 8.8 618 19.5	8.3 8.9 459 19.5	8.4 9.0 381 19.5	8.4 9.0 343 19.5	8.4 9.0 327 19.5	8.4 9.3 302 19.5
20.0	20.0	20.0	20.0	20.0	20.0
8.0 9.6 616 19.5	8.3 9.0 456 19.5	8.5 8.7 373 19.5	8.6 8.7 335 19.5	8.8 3.18 19.5	8.8 8.7 296 19.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control

Sample Number: 03900057	TEST ELAPSE CONC. X 00:00	100 pH 02 ppm Cond. Temp(C)	50 pH 02 ppm Cond. Temp(C)	Toxicity 25 pH 02 ppm Cond.	13 pH 02 ppm Cond, Temp(C)	TOTAL 6 pH ORTALITY 02 ppm Cond.	0 Control pH 0 2 ppm 0 16 Cond. 16 Temp(C) 8	
TEST CONDITIONS	Company : Dofasco Hamilton, ONT (1460005) Region : West Central Industry : Iron and Steel		** ** **	assay	Weight(gm) : Length(mm) : MORTALITY DATA	CONC. ELAPSED TIME MOR X 00:00 24:00 48:00	100 0 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0	1 LTS0 > 100

34

TOXICITY TEST PARAMETERS

Sample Number: 03900124

ELAPSED TIME

00:00 24:00 48:00

8.1 8.2 736 20.0	8.3 8.4 523 20.0	8.4 8.5 418 20.0	8.4 8.5 364 20.0	8.4 8.5 331 20.0	8.7 308 20.0
19.5	19.5	19.5	19.5	19.5	19.5
8.1 9.0 735	8.4 8.8 525 20.0	8.5 8.8 419 20.0	8.7 367 20.0	8.6 8.7 337 20.0	8.6 8.8 304 20.0
pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	(pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control

MISA Daphnia

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900207

TOXICITY TEST REPORT

TEST CONDITIONS		Sample No	Sample Number: 03900207
Сопрапу	Dofasco Hamilton, ONT	TEST CONC.	ELAPS
Region :	: West Central : Iron and Steel	36	00:00
Control point :	: Ottawa Street Sewer, (200)	100	
Laboratory Sampling Method Sampled By	BAR Grab D. Spong		02 ppm 8.76 Cond. 76 Temp(C) 21.
	: 03/20/90 : 03/20/90 at: 1620	20	DH 8. 02 ppm 8. Cond. 53
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	52	
Test Animal Weight(gm) Length(mm)	. D. magna	13	O =
MORTALITY DATA			
TEST E L A P S CONC.	E D T I M E HORTALITY	9	02 ppm 8.
% 00:00 24:00 48:00	₹8:00		0
100 0 0 25 0 0 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	Control pH 02 ppm Cond. Temp(C)	pH 8. 02 ppm 8. Cond. 25
48 Hour LC50	: Non-lethal		
95% fid. limits	× 0.0 - 0.0 :		
Comments	: Non lethal		

8.3 365 20.0 8.3 8.5 8.6 8.2 8.6 20.0 20.0 20.0

20.0

20.02

20.0

8.73 88.7 88.7 81.0 21.0 21.0 21.0 88.7 88.4 88.7 36.1 21.0 21.0 21.0 21.0 21.0 21.0

8.0 8.4 769 20.0

8.0 8.8 767 21.0

20.02

ELAPSED TIME 00:00 24:00 48:00 8.4 540 20.0 8.2 8.2 8.4 20.0

20.02

20.02

Region Industry

Company

Test Animal Weight(gm) Length(mm)

TEST CONC. 3-6 00000

100 50 25 13 6 Control

Comments

289

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

ELAPSED TIME Sample Number: 03900301 TEST CONC.

00:00 24:00 48:00

8.0 9.1 754 19.5	8.2 9.1 527 19.5	8.2 9.2 412 19.5	8.3 9.1 356 19.5	8.3 9.1 326 19.5	8.3 9.0 19.5
19.5	19.5	19.5	19.5	19.5	19.5
8.0 8.9 754 19.5	8.2 9.0 527 19.5	8.3 9.0 411	8.3 9.0 356 19.5	8.3 9.0 324 19.5	8.4 9.2 297 19.5
pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)
100	20	52	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 03900389

TOXICITY TEST REPORT

TEST CONDITIONS

Company : Dofasco Hamilton ONT						
11/4/0005	TEST	EL	LAPSED		TIME	
Region : West Central Industry : Iron and Steel	2000		00:00	00:00 24:00 48:00	8:00	
Control point : Ottawa Street Sewer, (200)			0			
Sampling Method : Grab Sampled By : D. Spong	2	ph 02 ppm Cond. Temp(C)	8.0 8.2 750 20.0	19.0	8.9 753 19.0	
	20	pH 02 ppm cond. Temp(C)	8.1 8.6 528 20.0	19.0	8.2 8.9 528 19.0	
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm	8.7		8.8.3	
		Temp(C)	20.0	19.0	19.0	
Length(mm) :	13	pH 02 ppm Cond.	88.8		8.8.3	
MORTALITY DATA		Temp(C)	20.0	19.8	19.0	
TEST ELAPSED TIME TOTAL CONC. MORTALITY	9	PH 02 ppm	88.2		88.9	
x 00:00 24:00 48:00 x		Temp(C)	20.0	19.0	19.0	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	of ph O2 ppm Cond. Temp(C)	8.3 8.7 294 20.0	19.0	8.3 303 19.0	
48 Hour LC50 : Non-lethal						
95% fid. limits : 0.0 - 0.0 %						
Comments : Non lethal						

7.8 8.5 410 20.0

7.9 8.4 495 20.0

7.8 8.4 360 20.0

7.8 8.6 330 20.0

7.7 8.6 310 20.0

	TOXICITY TEST REPORT	Sample: 03900494	
TEST CONDITIONS			
Company	: Dofasco Hamilton, ONT		
Region Industry	: West Central : Iron and Steel		
Control point	: Ottawa Street Sewer, ((200)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Ha : 06/18/90 : 06/19/90 : 06/20/90 at: 1045		
Type of Bioassay	: STATIC (Daphnia magna Acute L Test Protocol. OME, 1	Lethality Toxicity 1988)	
Test Animal Weight(gm) Length(mm)	. D. magna		
MORTALITY DATA			
TEST ELAP	SED TIME	TOTAL MORTALITY	
x 00:00 24:00	0 48:00	34	
100 0 0 0 25 0 1 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00-000	00800	
48 Hour LC50	: >100%		
95% fid. limits	x 0°0 - 0°0 :		
Comments	: LC50 >100		

	1 M E	7.9 8.4 720 20.5	8.0 8.6 519 20.5	8.1 8.7 417 20.5	8.1 8.7 366 20.5	8.2 8.7 337 20.5	8.2 8.7 308 20.5
	D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
900494	A P S E 00:00	7.8 8.3 726 20.0	8.0 8.8 522 20.0	8.1 8.9 419 20.0	8.1 8.9 368 20.0	8.1 8.9 341 20.0	8.1 9.0 314 20.0
Sample Number: 03900494	ш	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)				
Sample	TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample Number: 03900620

8.8 388 20.5 8.3 8.7 320 20.5 8.2 8.7 348 20.5 8.0 8.4 645 20.5 00:00 24:00 48:00 TIME 20.02 20.02 20.02 20.0 ELAPSED 8.2 9.0 390 20.5 8.3 9.0 349 20.5 8.3 9.0 322 20.5 8.9 473 20.5 pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) Control TEST CONC. 9 13 100 20 25

20.02

MISA Daphnia

00000 Sample: 03900707 : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) TOTAL MORTALITY Ottawa Street Sewer, (200) BAR Grab S. Ha 08/20/90 08/21/90 08/21/90 at: 1500 TOXICITY TEST REPORT 0.0 : Dofasco Hamilton, ONT (1460005) : West Central : Iron and Steel TIME : LC50 >100 . D. magna 0.0 : >100% 00:00 24:00 48:00 ELAPSED 00-000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA 48 Hour LC50 Control point 000000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 50 25 13 6 Control Сопрапу TEST CONC. 36

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900707

T I M E	8.0 8.0 597 21.0	8.2 8.3 450 21.0	8.3 377 21.0	8.3 8.5 342 21.0	8.4 8.6 322 21.0	8.4 8.5 300 21.0
3.	20.0	20.0	20.0	20.0	20.0	20.0
L A P S E D 00:00 2	8.0 8.2 599 21.0	8.2 8.6 451 21.0	8.3 8.7 374 21.0	8.3 8.7 339 21.0	8.3 318 21.0	8.8 8.8 301 21.0
EL	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	20	52	13	•	Control

34

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900816

I M E	48:00	8.0 8.2 575 20.5	8.2 8.5 437 20.5	8.2 8.5 370 20.5	8.2 8.6 338 20.5	8.2 8.6 319 20.5	8.3 8.6 304 20.5
-	24:00	19.5	19.5	19.5	19.5	19.5	19.5
APSED	00:00	8.2 8.4 565 21.0	8.4 8.7 431 21.0	8.4 8.8 366 21.0	8.4 8.8 332 21.0	8.8 313 21.0	8.8 302 21.0
EL		pH 02 ppm Cond. Temp(C)					
TEST	2	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 03900918

TOXICITY TEST REPORT

TEST CONDITIONS		Sample Numi	Sample Number: 03900918		
Company Region	Bofasco Hamilton, ONT (1460005)	TEST CONC.	E L A P S E D 00:00 2	0: 5	T I M E
Control point	_				
Laboratory Sampling Method Sampled By		100 pH 02 02 02 02 02 02 02 02 02 02 02 02 02	pH 7.9 02 ppm 8.6 cond. 548 Temp(C) 20.5	20.5	8.0 8.4 552 20.5
Received Tested		50 pH 02 02 02 Col	02 ppm 8.2 Cond. 419 Temp(C) 20.5	20.5	8.2 8.7 424 20.5
Type of Bloassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25 PH 02	02 ppm 8.3		8.8.7
Test Animal	: D. magna	Ter	Temp(C) 20.5	20.5	20.5
Length (mm)	• ••	13 pH 02 02 00 00 1	O2 ppm 8.4 Cond. 331 Temp(C) 20.5	20.5	8.8 333 20.5
CONC.	SED TIME TOTAL MORTALITY	6 pH	pH 8.4		88.5
x 00:00 24:00	0 48:00	Te	Temp(C) 20.5	20.5	20.5
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	Control pH 02 Col	PH 8.4 02 ppm 9.0 Cond. 297 Temp(C) 20.5	20.5	8.3 8.6 297 20.5
48 Hour LC50	: Non-lethal				
95% fid. limits	% 0°0 - 0°0 :				
Comments	: Non lethal				

Sample: 03900058
REPORT
TEST
TOXICITY

					>				ж	800090		
			(300)		Lethality Toxicity 1988)			TOTAL				
	Dofasco Hamilton, ONT	(1460005) West Central Iron and Steel	Boiler House Sewer #1	BAR Grab S. Ha 01/23/90 01/23/90 at: 1430	STATIC (Daphnia magna Acute Test Protocol. OME,	D. magna		D TIME	48:00	-00070	>100%	100
LESI CONDITIONS	Company :	Region :	Control point :	Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay :	Test Animal : Weight(gm) : Length(mm) :	MORTALITY DATA	TEST ELAPSE CONC.	x 00:00 24:00 4	100 0 1 50 0 0 25 0 0 0 13 0 0 0 6 0 0 0	48 Hour LC50 :	,

TOXICITY TEST PARAMETERS

Sample Number: 03900058

1 M E	8.2 8.1 735 20.5	8.3 8.1 522 20.5	8.3 8.1 412 20.5	8.4 8.0 359 20.5	8.3 8.1 329 20.5	8.3 298 20.5
D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
00:00	8.1 9.0 746 20.0	8.3 8.9 527 20.0	8.4 8.8 413 20.0	8.4 8.8 360 20.0	8.5 8.8 329 20.0	8.8 304 20.0
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	1 pH 02 ppm Cond. Temp(C)
CONC.	100	20	25	13	9	Control

Company : Dof Region : Wes Industry : Iro Control point : BAR Sampling Method : Graf	Dofasco	
86 00 00 00 00 00	ofasco	
** ** ** **	Hamilton, ONT	
** ** **	West Central Iron and Steel	
** **	Boiler House Sewer #1, (300)	0)
** ** ** **	Grab S. Ha 04/16/90 04/17/90 04/17/90 at: 1510	
Type of Bioassay : ST (D	STATIC (Daphnía magna Acute Lethal Test Protocol. OME, 1988)	Lethality Toxicity 1988)
Test Animal : D. Weight(gm) :	. magna	
MORTALITY DATA		
CONC.	TIME	TOTAL MORTALITY
x 00:00 24:00 48:00	00	×
700 0 3 4 50 0 0 0 25 0 0 0 0 13 0 0 0 6 0 0 0 0		00000
48 Hour LC50 : >	>100%	
95% fid. limits :	0.0 - 0.0 %	
Comments : LC	LC50 >100	

	1 M E	8.1 8.8 776 19.5	8.2 8.9 540 19.5	8.2 8.9 421 19.5	8.3 360 19.5	8.3 8.8 326 19.5	8.3 9.0 299 19.5
	D T 1	19.5	19.5	19.5	19.5	19.5	19.5
900300	LAPSED T 00:00 24:00	9.2	8.2 9.1 537 19.5	8.3 9.0 418 19.5	8.4 9.0 359 19.5	8.4 9.0 326 19.5	8.4 9.2 297 19.5
Sample Number: 03900300	П	pH 02 ppm Cond. Temp(C)					
Sample	TEST CONC.	100	20	25	13	•	Control

TOXICITY TEST PARAMETERS

Sample: 02900111

TOXICITY TEST REPORT

TEST CONDITIONS		o como	Namber: 02000120	00120
Company Region Industry	: Dofasco Hamilton, ONT (146005) : West Central : Iron and Steel	TEST CONC.	. w	LAPSED TIM 00:00 01:00 02:
Control point	: Boiler House Sewer #1, (300)	100	Ha	7.4
Laboratory Sampling Method Sampled By	: MOE : Grab : M. Smithson : A.72.00		02 ppm Cond. Temp(C)	6.6 650 20.0
Received		09	pH 02 ppm Cond. Temp(C)	7.6 8.1 520 20.0
Type of Bloassay	: SIATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	30	pH 02 ppm cond.	7.7 8.6 410
Test Animal Weight(gm) Length(mm)	. D. magna	15	Temp(C) PH 02 ppm	20.0 7.8 8.8
MORTALITY DATA			Cond. Temp(C)	355
TEST E L A P	SED TIME TOTAL HORTALITY	ın	pH 02 ppm	7.8
x 00:00 01:	:00 02:00 04:00 24:00 48:00 %		Temp(C)	20.0
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Control	(pH 02 ppm Cond. Temp(C)	7.8 8.9 305 20.0
48 Hour LC50	: Non-lethal			
95% fid. limits	: 0.0 - 0.0 %			

20.05 20.05

:00 04:00 24:00 48:00

	I M E	48:00	8.0 8.4 629 20.5	8.2 8.6 464 20.5	8.2 8.6 384 20.5	8.3 8.8 346 20.5	8.3 8.8 321 20.5	8.2 8.8 301 20.5
Sample Number: 03900621	ELAPSED TI	7 00:50	20.0	20.0	20.0	20.02	20.0	20.0
		00:00 24:00	8.1 8.9 625 20.5	8.2 9.0 464 20.5	8.2 9.0 383 20.5	8.3 9.0 344 20.5	8.3 9.0 318 20.5	8.3 300 20.5
			pH 02 ppm Cond. Temp(C)	1 pH 02 ppm Cond. Temp(C)				
Sample	TEST	×	100	20	25	13	9	Control

Сопрапу	: Dofasco Hamilton, ONT	
Region Industry	: West Central : Iron and Steel	
Control point	: Boiler House Sewer #1, (300)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab S. Ha 10/22/90 :10/23/90 :10/24/90 at: 1140	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
TEST E L A P	SED TIME TOTAL MORTALITY	
x 00:00 24:0	24:00 48:00	ж
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-00-00	800800
48 Hour LC50	\$ >100%	
95% fid. limits	% 0°0 - 0°0 °	
Comments	: LC50 >100	

TOXICITY TEST PARAMETERS

Sample: 03900919

TOXICITY TEST REPORT

Sample Number: 03900919	1 M E	8.0 8.5 550 20.0	8.2 8.7 425 20.0	8.3 366 20.0	8.3 8.9 336 20.0	8.3 8.9 318 20.0	8.3 8.9 303 20.0
	D T	20.5	20.5	20.5	20.5	20.5	20.5
	A P S E	8.1 9.1 542 20.5	8.1 9.1 420 20.5	8.2 9.1 364 20.5	8.2 9.1 335 20.5	8.3 9.1 316 20.5	8.3 9.1 301 20.5
	EL	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	52	13	•	Control

TOXICITY TEST PARAMETERS

Sample: 03890283

TOXICITY TEST REPORT

	48:00	8.5 9.2 303 20.0	8.3 9.3 322 20.0	8.3 9.3 342 20.0	8.3 9.3 380 20.0	8.2 9.1 457 20.0	8.9 611 20.0
I M E	24:00	20.0	20.0	20.0	20.0	20.0	20.0
		20.0	20.0	20.0	20.0	20.0	20.0
APSE	00:00	8.5 8.6 298 20.0	8.4 8.6 321 20.0	8.4 8.4 342 20.0	8.4 8.4 379 20.0	8.4 8.5 459 20.0	8.4 8.7 614 20.0
EL		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST	, xx	Control	9	13	25	20	100
	ELAPSED TIM	6 L A P S E D T I M 00:00 04:00 24:0	ol pH 8.5 Cond. Cond. Temp(C) 20.0 20.0 20.0	of pH 8.5 Cond. 20.0 20.0 20.0 PH 8.5 Cond. 29m 8.6 Cond. 298 Temp(C) 20.0 20.0 20.0 PH 8.4 Cond. 321 Temp(C) 20.0 20.0 20.0 20.0 20.0	of pH 8.5 Cond. 20.00 24:00 4 Cond. 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20	PELAPSED TIME 00:00 04:00 24:00 4:00 24:00 4:00 24:00 4:00	PH 8.5 Cond. Temp(C) 20.0 24:00 4:00 4:00 4:00 4:00 4:00 4:00 4:

Company	: Dofasco Hamilton, ONT		
Region Industry	: West Central : Iron and Steel		
Control point	: West Bay Front Sewer,	Sewer, (400)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	. BAR Grab D. Spong 12/12/89 : 12/12/89 : 12/13/89 at:	1030	
Type of Bioassay	: STATIC (Daphnia magna Acute Test Protocol. OME,	Acute Lethality Toxicity OME, 1988)	
Test Animal Weight(gm) Length(mm)	. D. magna		
MORTALITY DATA			
TEST ELAPS CONC.	ED TIME	TOTAL	
x 00:00 24:00	48:00		34
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			000850
48 Hour LC50	: >100%		
95% fid. limits	0.0 - 0.0 :	*	
Commente	. 1550 > 100%		

TOXICITY TEST PARAMETERS

Sample: 03890330

TOXICITY TEST REPORT

	I M E	8.0 8.4 683 19.5	8.2 8.8 494 19.5	8.3 8.9 394 19.5	8.4 8.9 356 19.5	8.4 8.8 326 19.5
	D T	20.0	20.02	20.0	20.0	20.0
3890330	L A P S E	7.9 8.3 661 19.5	8.3 4.83 19.5	8.5 8.6 383 19.5	8.6 8.6 342 19.5	8.8 3.18 19.5
Sample Number: 03890330	m	pH 02 ppm cond. Temp(C)				
Sample	TEST CONC.	100	20	25	13	9

8.4 9.6 302 19.5

8.8 8.7 296 19.5 20.0

Control pH 02 ppm Cond. Temp(C)

TOXICITY TEST PARAMETERS

Sample: 03900056

TOXICITY TEST REPORT

LEST CONDITIONS	Samo	A2000050 - 20-400-14 - 1-0000	A200		
	TEST CONC.	RUMBEL 0590	A P S E D	1 1	E E
Region : West Central Industry : Iron and Steel	ĸ		00:00 54:00 48:00	77 00 2 7	00:00
70	100	pH O2 ppm Cond. Temp(C)	7.7 9.2 742 20.0	20.5	8.1 8.3 743 20.5
•• •• ••	20	pH 02 ppm cond. Temp(C)	8.1 9.2 528 20.0	20.5	8.3 8.4 523 20.5
assay	25	pH 02 ppm cond. Temp(C)	8.3 9.2 417 20.0	20.5	8.4 8.4 4.12 20.5
ATA	13	pH 02 ppm Cond. Temp(C)			8.5 360 20.5
ELAPSED TIME TOTAL MORTALITY 00:00 24:00 48:00	•	pH O2 ppm Cond. Temp(C)	8.5 9.2 333 20.0	20.5	8.5 8.5 329 20.5
100 0 0 0 16 25 0 0 0 1 2 16 16 16 16 16 16 16 16 16 16 16 16 16	Control	02 ppm Cond. Temp(C)	8.5 8.8 299 20.0	20.0	8.5 8.3 297 20.0
48 Hour LC50 : >100% 95% fid. limits : 0.0 - 0.0 %					
Comments : LC50 >100					

TEST CONDITIONS		
	Dofas Hamil (1460	
Region Industry	: West Central : Iron and Steel	
Control point	: West Bay Front Sewer, ((400)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab S. Ha 02/20/90 02/20/90 02/20/90 at: 1515	
Type of Bioassay	: STATIC (Daphnia magna Acute Le Test Protocol. OME, 19	Lethality Toxicity 1988)
Test Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
CONC.	ED TIME	TOTAL MORTALITY
x 00:00 24:00	24:00 48:00	**
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	x 0.0 - 0.0 :	
Comments	: Non-lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

	1 M E 48:00	8.0 8.2 775 20.0	8.2 8.5 542 20.0	8.3 8.6 428 20.0	8.4 8.6 369 20.0	8.4 8.6 335 20.0	8.4 8.5 308 20.0
	D T 24:00	19.5	19.5	19.5	19.5	19.5	19.5
3900125	00:00	7.8 8.9 762 20.0	8.8 8.8 540 20.0	8.4 8.8 426 20.0	8.5 8.7 370 20.0	8.5 8.7 337 20.0	8.6 8.8 304 20.0
Sample Number: 03900125	ш	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond: Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.3 8.5 333 20.0 8.2 8.5 428 20.0 8.2 8.5 368 20.0 8.0 8.4 796 20.0 8.5 552 20.0 00:00 24:00 48:00 H ... 20.0 20.0 20.0 20.0 20.02 20.0 ELAPSED 8.4 8.8 426 21.0 8.8 366 21.0 8.0 9.1 801 21.0 8.2 8.9 549 21.0 Sample Number: 03900208 pH 02 ppm Cond. Temp(C) Cond. Temp(C) Control TEST CONC. 9 13 100 20 25

TEST CONDITIONS		Comment of Manager	O200030
Company : Dofasco	co ton, ONT	TEST	ELAPSE
Region : West Centri Industry : Iron and S	(146005) West Central Iron and Steel	° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °	
TI	: West Bay Front Sewer, (400) BAR Grab S. Ha	100 pH Coppm Cond. Cond.	pH 8.8 02 ppm 9.2 Cond. 784 Temp(C) 19.5
00 00 00	/90 /90 at: 1515	50 pH 02 ppm Cond. Temp(C)	
issay	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol, OME, 1988)	25 pH 02 ppm Cond.	8.4 pm 9.1
Test Animal : D. magna Weight(gm) : Length(mm) :	gne	13 pH 02 ppm Cond. Temp(C)	
TEST E L A P S E D T CONC. x 00:00 24:00 48:00	I I M E TOTAL MORTALITY	6 pH 02 ppm Cond. Temp(C)	pH 8.4 02 ppm 9.2 Cond. 327 Temp(C) 19.5
100 0 0 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0		Control pH 02 ppm Cond. Temp(C)	pH 8.4 02 pcm 9.2 Cond. 297 Temp(C) 19.5
48 Hour LC50 : Non-lethal 95% fid, limits : 0.0 - Comments : Non-lethal	lethal . 0.0 %		

8.3 9.0 328 19.5

19.5

8.3 9.0 798 19.5

8.8 9.2 784 19.5

19.5

LAPSED TIME 00:00 24:00 48:00

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900299

TOXICITY TEST REPORT

8.3 9.1 552 19.5

19.5

8.3 9.1 425 19.5

8.4 9.1 422 19.5

19.5

8.3 9.1 365 19.5

8.4 9.1 364 19.5

19.5

8.3 8.9 297 19.5

19.5

	IME	48:00	8.1 8.7 822 19.0	8.8 558 19.0	8.3 9.1 428 19.0	8.3 9.0 366 19.0	8.8.32 19.0	8.3 8.9 19.0
	1 0	24:00	19.0	19.0	19.8	19.0	19.0	19.0
3900390	LAPSEI	00:00	8.0 7.7 822 20.0	8.1 8.5 557 20.0	8.7 8.7 428 20.0	8.2 8.7 366 20.0	8.2 8.7 330 20.0	8.3 8.7 294 20.0
Sample Number: 03900390	ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
Sample	TEST) } }	100	20	25	13	v	Control

TOXICITY TEST PARAMETERS

Sample: 02900112

TOXICITY TEST REPORT

TEST CONDITIONS			Sample	Sample Number: 02900112	0112
Сотрапу	: Dofasco Hamilton, ONT		TEST	ELA	PSED TIME
Region Industry	: West Central : Iron and Steel		25%		00:00 01:00 02:00
Control point	: West Bay Front Sewer, (400)	ewer, (400)	100	#d.co	8.2
Sampling Method Sampled By	Grab B. Smithson 66/13/90			Cond. Temp(C)	720
Received	: 06/15/90 at: 1	1100	09	pH O2 ppm Cond. Temp(C)	8.1 8.5 560 20.0
Type of Bioassay	: STATIC (Daphnia magna Ad Test Protocol. (STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	30	pH 02 ppm	8.0
Test Animal	: D. magna			Temp(C)	20.0
Length(mm)	6 00		15	pH 02 ppm cond.	8.0 36.8 55.0
MUKIALIIT DAIA				(n)dwa	0.02
TEST E L A P	SED TIME	TOTAL	L/s	PH 02 ppm	8.8 3.5
x 00:00 01:00	00 02:00 04:00 24:00 48:00	x 00:85		Temp(C)	20.02
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000	0000-0	Control	pH 02 ppm Cond. Temp(C)	7.9 8.8 270 20.0
48 Hour LC50	: >100%		·		
95% fid. limits	0.0 - 0.0 :	34			
Comments	: MISA Audit				

88.0 20.05 20.00 2

00:00 01:00 02:00 04:00 24:00 48:00

TEST CONDITIONS			
			Sample Nu
Company Region Industry	Dofasco Hamilton, ONT (1460005) West Central : Iron and Steel		TEST CONG.
Control point	: West Bay Front Sewer, (400)	(400)	
	Grab S. 48		100
	: 06/19/90 : 06/20/90 at: 1100		50 00 00 00 00 00 00 00 00 00 00 00 00 0
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	Lethality Toxicity 1988)	25
	. D. magna		
Length(mm)	••		13
TEST ELAPS	ED TIME	TOTAL MORTALITY	•
00:00 24:00 48:00	48:00	34	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	Control 0
48 Hour LC50	: Non-lethal		
95% fid. limits	: 0.0 - 0.0 :		
Comments	: Non-lethal		

	I M E	48:00	8.1 8.3 765 20.5	8.2 8.6 543 20.5	8.1 8.8 430 20.5	8.2 8.8 373 20.5	8.2 8.8 341 20.5	8.2 8.7 307 20.5
		24:00	20.0	20.0	20.0	20.0	20.0	20.0
900495	APSE	00:00	8.6 8.3 761 20.0	8.7 8.7 540 20.0	8.2 8.9 428 20.0	8.2 8.9 372 20.0	8.2 8.9 341 20.0	8.1 9.0 314 20.0
Sample Number: 03900495	E L		pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
Sample	TEST CONC.	ĸ	100	20	25	13	•	Control

TEST CONDITIONS						
Company	: Dofasco Hamilton,	DNT				
Region Industry	: West Central : Iron and Steel	al teel				
Control point	: West Bay Front		Sewer,	(400)		
Laboratory Sampling Method Sampled By Date Collected Received Tested	Grab Grab S. Ha 07/23/90 07/25/90	B	1120			
Type of Bioassay	: STATIC (Daphnia magna Test Protocol.	agna col.	Acute OME,	Lethality Toxicity 1988)	Toxicity	
Test Animal Weight(gm) Length(mm)	. D. magna					
MORTALITY DATA						
CONC.	ED TIM	ш		HORT	TOTAL	
x 00:00 24:00	48:00					×
100 0 1 25 0 0 0 13 0 0 0 6 0 0 0	-00000					20000
48 Hour LC50	: >100%					
95% fid. limits	- 0.0 :	0.0	*			
Commonte	150 >100					

SLOPE of Mortality Curve : LC50 Calculated By :

	I M E	8.1 8.3 703 21.0	8.2 8.5 500 21.0	8.2 8.6 398 21.0	8.3 8.7 354 21.0	8.3 8.8 326 21.0	8.8 301 21.0
	D T	20.0	20.0	20.0	20.0	20.0	20.0
3900622	L A P S E 00:00	8.6 8.3 703 20.5	8.8 8.8 505 20.5	8.3 8.9 403 20.5	8.3 9.0 358 20.5	8.3 9.1 325 20.5	8.3 9.2 300 20.5
Sample Number: 03900622	ш	pH 02 ppm cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
Sample	TEST CONC.	100	20	25	13	9	Control

34

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

8.4 8.6 326 21.0 8.5 8.6 350 21.0 9.0 8.2 657 21.0 8.8 8.4 481 21.0 00:00 24:00 48:00 20.5 20.5 20.5 20.5 20.5 20.5 ELAPSED 8.5 8.7 321 21.0 8.7 8.7 373 21.0 9.6 8.6 637 21.0 9.0 8.7 471 21.0 Sample Number: 03900708 pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) (D)dwa_ PH 02 ppm Cond. Control TEST CONC. 9 13 100 50 25

TEST CONDITIONS						
Company		Dofasco Hamilton, (1460005)	TNO			
Region Industry	•• ••	West Central Iron and Steel	steel			
Control point		West Bay Front Sewer, (400)	ront	Sewer,	(400)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	** ** ** ** **	BAR Grab S. Ha 09/17/90 09/18/90	a	1540		
Type of Bioassay		STATIC (Daphnia magna Test Protocol.	nagna ocot.	Acute OME,	Lethality Toxicity 1988)	
Test Animal Weight(gm) Length(mm)	** ** **	D. magna				
MORTALITY DATA						
CONC.	S	ED TIP	E		TOTAL	
x 00:00 24:0	0	24:00 48:00				ж
100 0 0 50 0 0 25 0 0 0 13 0 0 6 control 0 0		00000		•		00000
48 Hour LC50	**	Non-lethal	- F			
95% fid. limits	**	0.0	0.0	× 0		
Comments		: Non-lethal	_			

TOXICITY TEST PARAMETERS

Sample: 03900817

TOXICITY TEST REPORT

1 M E	48:00	8.4	8.3 476 20.5	8.3 8.4 388 20.5	8.3 348 20.5	8.3 325 20.5	8.3 8.6 304 20.5
1		19.5	19.5	19.5	19.5	19.5	19.5
APSE	00:00	9.2 8.6 627 21.0	8.9 8.9 464 21.0	8.7 8.9 379 21.0	8.6 8.9 341 21.0	8.8 3.18 21.0	8.5 8.8 302 21.0
ш		pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
TEST	**	100	20	25	13	9	Control
	ELAPSED TIM	LAPSED TIM 00:00 24:00 48:0	PH 9.2 Cond. Cond. 21.0 19.5 2 Temp(C) 21.0 19.5 2	PH 9.2 00:00 24:00 48 02 ppm 8.6 627 1 cmp(c) 21.0 19.5 2 ppm 8.9 02 ppm 464 1 cmp(c) 21.0 19.5 2	ELAPSED T1 00:00 24:00 4 02 ppm 8.7 00:00 24:00 4 02 ppm 8.9 02 ppm 8.9 02 ppm 8.9 03 ppm 8.9 0464 Temp(C) 21.0 19.5 PH 8.7 02 ppm 8.9 Cond. 464 Temp(C) 21.0 19.5	ELAPSED T1 00:00 24:00 44 Cond. Temp(C) 21:0 19:5 PH 8.9 O2 ppm 8.9 Cond. Temp(C) 21:0 19:5 PH 8.7 O2 ppm 8.9 Cond. Temp(C) 21:0 19:5 PH 8.7 O2 ppm 8.9 Cond. Temp(C) 21:0 19:5 PH 8.6 O2 ppm 8.9 Cond. Temp(C) 21:0 19:5 PH 8.6 O2 ppm 8.9 Cond. Temp(C) 21:0 19:5	ELAPSED T1 00:00 24:00 48 02 ppm 8.6 02 ppm 8.9 02 ppm 8.9 03 ppm 8.9 04 ppm 8.9 05 ppm 8.9 06 ppm 8.9 07 ppt 8.7 08 ppm 8.9 08 ppm 8.9 09 ppt 8.7 09 ppt 8.7 00 ppt 8.6 00 ppt 8.8

H E	.8:00	8.5 8.8 627 20.0	8.4 8.9 465 20.0	8.3 9.0 385 20.0	8.3 9.0 347 20.0	8.3 9.0 322 20.0	8.3 8.9 303 20.0
1 0	54:00 4	20.5	20.5	20.5	20.5	20.5	20.5
LAPSE	00:00 54:00 48:00	9.2 9.1 612 20.5	8.8 9.1 458 20.5	8.5 9.1 379 20.5	8.4 9.1 343 20.5	8.3 9.1 318 20.5	8.3 9.1 301 20.5
ш		pH 02 ppm cond. Temp(C)	of pH O2 ppm Cond. Temp(C)				
TEST	NA NA	100	20	25	13	9	Control

	48:00	8.4 9.2 297 20.0	8.3 9.2 313 20.0	8.3 9.3 330 20.0	8.3 9.2 360 20.0	8.2 9.1 421 20.0	8.1 8.9 543 20.0
	I M E 24:00 48:00	20.0	20.0	20.0	20.0	20.0	20.0
		20.0	20.0	20.0	20.0	20.0	20.0
3890282	LAPSED T 00:00 04:00	8.5 298 20.0	8.4 8.6 323 20.0	8.4 8.6 340 20.0	8.4 8.5 370 20.0	8.3 8.6 433 20.0	8.0 8.8 563 20.0
Sample Number: 03890282	m	PH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
Sample	TEST CONC.	Control	9	13	25	20	100

Company : Dofasco Hamilton, ONT (1460005) Region : West Central Industry : Iron and Steel Control point : Bay Water Intake, (500) Laboratory : BAR Sampled By : Grab D. Spong Date Collected : 12/12/89	Samp TEST CONC. % 50
Bay Water Intake, (500) Bay Water Intake, (500) Bay Water Intake, (500) 12/12/89 12/12/89 12/13/89 at: 1055 SIATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) D. magna PSED TIME MORTALITY	100
atory : BAR Grab Grab Grab Grab Grab Grab Grab 12/12/89 12/12/89 12/12/89 12/13/89 12/	100 50 25
of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) Animal : D. magna (Cam) : Campina	25
Animal : D. magna : t(gm) :	
ELAPSED TIME TOTAL MORTALITY	13
ELAPSED TIME TOTAL MORTALITY	
00.82 00.25 00.00	9
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Contr
48 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 % Comments : Non-lethal	

CITY TEST PARAMETERS

8.2 8.7 602 19.5 8.3 8.9 454 19.5 8.3 8.9 380 19.5 8.4 9.0 343 19.5 8.4 9.0 320 19.5 ELAPSED TIME 00:00 24:00 48:00 8.4 9.4 303 19.5 20.0 20.02 20.0 20.0 20.0 8.0 9.8 602 19.5 8.4 9.1 454 19.5 8.6 378 19.5 8.6 343 19.5 8.6 324 19.5 ole Number: 03890331 pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) trol

20.02

TOXICITY TEST PARAMETERS

Sample: 03900059

TOXICITY TEST REPORT

Sample Number: 03900059	TEST E L A P S E D T 1 M E CONC. \$ 00:00 24:00 48:00			02 ppm 9.2 Cond. 739	0.02 (2)4191	50 pm 8.2 02 ppm 9.0 Cond. 520	7° 8° 8	Cond. 414 Cond. 414 Temo(C) 20.0 20.0	8 8 4 8	Cond. 363 Temp(C) 20.0 20.0	6 pH 8.5 02 ppm 8.8 Cond 329	Temp(C) 20.0 20.0	Control pH 8.5 02 ppm 8.8 Cond. 304 Temp(C) 20.0 20.0			
							ty					ж	080000			
	: Dofasco Hamilton, ONT (146006) . Usest Central	el	: Bay Water Intake, (500)		•• ••	: 01/23/90 : 01/25/90 at: 1440	Acut	est Protocot. One, 1900)			APSED TIME TOTAL MORTALITY	00:00 24:00 48:00	000000000000000000000000000000000000000	: >100%	95% fid. limits : 0.0 - 0.0 %	: LC50 >100

Company

TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900126

ELAPSED TIME 00:00 24:00 48:00 TEST CONC.

8.2 8.4 704 20.0	8.3 508 20.0	8.4 8.6 411 20.0	8.4 8.6 361 20.0	8.4 8.6 330 20.0	8.5 8.4 305 20.0
19.5	19.5	19.5	19.5	19.5	19.5
8.1 9.1 694 20.0	8.4 9.0 503 20.0	8.5 9.0 411 20.0	8.8 360 20.0	8.6 8.8 332 20.0	8.6 8.8 304 20.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	1 pH 02 ppm Cond. Temp(C)
100	20	25	13	v	Control

TOXICITY TEST PARAMETERS

Sample: 03900205

TOXICITY TEST REPORT

TEST CONDITIONS					
. Dofesto	Sample	Sample Number: 03900205	00200		
•	TEST CONC.	EL	A P S E	T 0	I M
Region : West Central Industry : Iron and Steel	34		00:00 24:00 48:00	24:00	48:00
Control point : Bay Water Intake, (500)					
Sampling Method : Grab Sampled By : D. Spong	000	pH 02 ppm Cond. Temp(C)	8.4 8.7 740 21.0	20.0	8.5 733 20.0
Received: 03/20/90 at: 1600	20	pH 02 ppm Cond. Temp(C)	8.4 8.5 522 21.0	20.0	8.2 8.5 517 20.0
•	25	DH 02 ppm	88.4		8.8
Test Animal : D. magna		Temp(C)	21.0	20.0	20.0
Length(mm): MORTALITY DATA	13	pH 02 ppm cond. Temp(C)	8.5 357 21.0	20.0	8.2 8.6 358 20.0
TEST ELAPSED TIME TOTAL CONC.	9	pH 02 pom	88.4		80 80 10 10
x 00:00 24:00 48:00		Cond. Temp(C)	327	20.0	327
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	of ppm Cond. Temp(C)	8.5 8.6 299 21.0	20.0	8.3 20.0 20.0 20.0
48 Hour LC50 : >100%					
95% fid. limits : 0.0 - 0.0 %					
Comments : LC50 >100					

TOXICITY TEST PARAMETERS

Sample Number: 03900298

8.3 9.0 421 19.5 8.3 9.0 364 19.5 8.3 9.0 334 19.5 TIME 8.1 9.1 751 19.5 8.2 9.1 536 19.5 00:00 24:00 48:00 20.02 20.0 20.0 20.0 20.0 ELAPSED 8.2 8.9 532 19.0 8.3 8.9 419 19.0 8.0 8.9 744 19.0 8.3 8.9 363 19.0 8.4 9.0 334 19.0 pH 02 ppm Cond. Temp(C) Cond. Temp(C) pH 02 ppm cond. (D)dwaJ pH 02 ppm Control TEST CONC. 100 9 20 7 25

20.0

TEST CONDITIONS	
Company :	Dofasco Hamilton, ONT
Region : Industry :	
Control point :	Bay Water Intake, (500)
Laboratory Sampling Method Sampled By Date Collected Received	BAR Grab D. Spong 05/14/90 05/15/90 05/16/90 at: 1055
Type of Bioassay :	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	D. magna
MORTALITY DATA	
TEST ELAPS CONC.	ED TIME TOTAL MORTALITY
x 00:00 24:00 48:00	48:00
100 0 0 50 50 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50 :	Non-lethal
95% fid. limits :	% 0.0 - 0.0
Comments	Non lethal

TOXICITY TEST PARAMETERS

Sample: 03900391

TOXICITY TEST REPORT

Sample Number: 03900391

1 M E 48:00	8.2 9.2 731 19.0	8.3 9.1 514 19.0	8.3 9.1 405 19.0	8.3 9.1 353 19.0	8.3 9.0 329 19.0	8.3 8.9 299 19.0
	19.0	19.0	19.0	19.0	19.0	19.0
. A P S E 0 T 00:00 24:00	8.1 9.0 723 20.0	8.2 8.9 510 20.02	8.2 8.9 404 20.0	8.2 8.8 352 20.0	8.2 8.7 328 20.0	8.3 8.7 294 20.0
E L	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	DH OZ ppm Cond.
TEST CONC.	100	20	52	13	9	Control

25.55

34

SLOPE of Mortality Curve : LC50 Calculated By :

I E	8:00	7.9 8.5 717 20.5	8.0 8.6 517 20.5	8.1 8.7 412 20.5	8.1 8.7 365 20.5	8.1 8.7 336 20.5	8.2 8.6 305 20.5
-	24:00 48:00	20.02	20.02	20.0	20.0	20.0	20.0
LAPSED	00:00	7.8 8.6 716 20.0	7.9 8.9 516 20.0	8.0 9.0 411 20.0	8.1 9.0 365 20.0	8.1 8.9 337 20.0	8.1 9.0 314 20.0
H H		pH 02 ppm cond. Temp(C)	of pH O2 ppm Cond. Temp(C)				
TEST	34	100	20	25	13	•	Control

TOXICITY TEST PARAMETERS

Sample: 03900623

TOXICITY TEST REPORT

TEST CONDITIONS		e cue	Samole Number - 03000623	\$5900			
: Сопрапу	Dofasco Hamilton, ONT 71.40005,	TEST	E L	APSED	-	I M E	
Region :	Vest Central Iron and Steel	2		00:00 24:00 48:00	7 00:5	.8:00	
Control point :	Bay Water Intake, (500)	100	7	C		0	
70	Grab Sy, Ha	2	02 ppm Cond. Temp(C)	9.1 619 21.0	20.5	8.0 620 21.0	
Date Collected : Received : Tested :	07/25/90 07/25/90 at: 1350	20	pH 02 ppm Cond. Temp(C)	8.1 9.1 460 21.0	20.5	8.1 8.2 460 21.0	
Type of Bioassay :	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	52	pH 02 ppm Cond	9.1		8.2	
	D. magna		Temp(C)	21.0	20.5	21.0	
Weight(gm)		13	02 ppm	90.1		2.4%	
MORTALITY DATA			Temp(C)	21.0	20.5	21.0	
TEST ELAPS CONC.	E D T I M E TOTAL MORTALITY	9	02 ppm	9.0		8.2	
x 00:00 24:00 48:0	48:00		Temp(C)	21.0	20.5	21.0	
100 0 1 50 0 0 25 0 0 13 0 0 6 Control 0 0	2000 000 000 000	Control	O2 ppm Cond. Temp(C)	8.3 9.2 300 21.0	20.5	8.3 8.3 302 21.0	
48 Hour LC50 :	>100%						
95% fid. limits :	% 0°0 · 0°0						
Comments	: LC50 >100						

TOXICITY TEST PARAMETERS

Sample Number: 03900709

I M E	9.1 8.2 656 21.0	8.7 8.3 479 21.0	8.6 8.4 394 21.0	8.5 8.5 350 21.0	8.4 8.5 324 21.0	8.4 8.7 303 21.0
D T	20.5	20.5	20.5	20.5	20.5	20.5
LAPSED TIME 00:00 24:00 48:00	9.6 8.6 640 21.0	9.0 8.7 470 21.0	8.8 8.8 387 21.0	8.5 8.7 349 21.0	8.4 8.7 320 21.0	8.8 301 21.0
B	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	DH 02 ppm Cond.
CONC.	100	20	25	13	9	Control

CONDITIONS	
	: Dofasco Hamiton, ONT (146005)
	: Bay Water Intake, (500)
Laboratory Sampling Method Sampled By Date Collected Received	BAR Grab S. Ha : 09/17/90 : 09/18/90 at: 1600
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
J	. D. magna
A P S	E D T I M E TOTAL HORTALITY
24:00	48:00
00000	00000
"	: Non-lethal
95% fid. limits :	× 0.0 - 0.0 :
	- Non-lothe

8.2 8.4 431 20.5

8.3 8.9 425 21.0

pH 02 ppm Cond. Temp(C)

20

19.5

19.5

8.2 8.8 552 21.0

pH 02 ppm Cond. Temp(C)

100

ELAPSED TIME

TEST CONC.

Sample Number: 03900818

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

00:00 24:00 48:00

8.2 8.4 367 20.5

8.4 8.9 363 21.0

pH 02 ppm cond. Temp(C)

25

19.5

8.3 8.5 336 20.5

8.5 8.9 332 21.0

pH 02 ppm Cond. Temp(C)

7

19.5

8.3 304 20.5

pH 02 ppm Cond. Temp(C)

Control

19.5

8.3 8.5 320 20.5

8.8 3.15 21.0

pH 02 ppm cond. Temp(C)

9

19.5

TOXICITY TEST PARAMETERS

Sample Number: 03900921

TIME

ELAPSED

TEST CONC.

00:00 24:00 48:00

8.0 535 20.5	8.2 8.6 416 20.5	8.3 8.7 355 20.5	8.8 329 20.5	8.3 312 20.5	8.3 8.7 297 20.5
20.5	20.5	20.5	20.5	20.5	20.5
8.1 9.1 521 20.5	8.2 9.1 410 20.5	8.3 9.0 350 20.5	8.4 9.0 325 20.5	8.4 9.0 310 20.5	8.4 9.0 297 20.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
100	20	52	13	9	Control

TEST CONDITIONS		
Company	: Dofasco Hamilton, ONT	
Region Industry	: West Central : Iron and Steel	
Control point	: Boiler House Sewer #2, (1200)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Ha : 01/23/90 : 01/23/90 : 01/26/90 at: 1625	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1983)	
Test Animal Weight(gm) Length(mm)	: D. magna	
MORTALITY DATA		
CONC.	SED TIME TOTAL MORTALITY	
% 00:00 24:00 48:00	0 48:00	ж
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	000080
48 Hour LC50	: >100%	
95% fid. limits	: 0.0 - 0.0 ×	
Comments	: 1.050 > 100	

TOXICITY TEST PARAMETERS

Sample: 03900060

TOXICITY TEST REPORT

Sample Number: 03900060

I M E	8.2 8.2 637 20.5	8.4 8.1 472 20.5	8.4 8.1 387 20.5	8.5 8.1 346 20.5	8.5 325 20.5	8.5 305 20.5
D T 24:00	20.5	20.5	20.5	20.5	20.5	20.5
L A P S E 00:00	8.0 9.0 642 20.0	8.3 8.8 476 20.0	8.7 8.7 388 20.0	8.4 8.7 349 20.0	8.5 325 20.0	8.8 8.8 299 20.0
ш	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)				
TEST CONC.	100	20	52	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 02900110

TOXICITY TEST REPORT

TEST CONDITIONS

Say		
# West Central Ton and Steel	TEST	ELAPSED TIME
int : Boiler House Sewer #2, (1200) : HOE		00:00 01:00 02:00 04:00 24:00 48:00
## WOE ## Smithson ## Smithson ## Smithson ## 100/13/90 ## 100/15/90 at: 1100 ## 100/		
### 100 106/14/90 1100 106/15/90 1100 106/15/90 11100 1100	100 pH 02 ppm Cond. Temp(C)	7.8 8.0 8.2 8.5 630 640 5) 20.0 20.0
### STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) ##################################	60 pH 02 ppm Cond.	7.8 8.0 8.7 8.5 500 500
ELAPSED TIME MORTALITY **OO 01:00 02:00 04:00 24:00 48:00 **OO 01:00 00 00 00 **OO 00 00 00 **O	30	20.0 7.9 8.8
######################################		(10 415 415 415 20.0
ELAPSED TIME TOTAL MORTALITY 00:00 01:00 02:00 04:00 24:00 48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 pH 02 ppm	9.8
ELAPSED TIME MORTALITY 00:00 01:00 02:00 04:00 24:00 48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Cond. Temp(C)	
0 01:00 02:00 04:00 24:00 48:00	5 pH 02 ppm	7.9
	Control pH 02 ppm 02 ppm 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.8 8.7 8.5 285 290 30.0 20.0
48 Hour LC50 : Non-lethal		
95% fid. limits : 0.0 - 0.0 %		
Comments : MISA Audit; Non-lethal		

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MISA Daphnia

Сощрапу	: Dofasco Hamilton, ONT (1460005)
Region Industry	: West Central : Iron and Steel
Control point	: Boiler House Sewer #2, (1200)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Ha : 07/24/90 : 07/25/90 at: 1355
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	: D. magna :
MORTALITY DATA TEST E L A P CONC.	SED TIME HORTALITY
x 00:00 24:00	00 78:00
100 0 0 25 0 1 1 3 0 2 2 6 0 0 1 2 6	00-01-0
48 Hour LC50	: >100%
95% fid. limits	× 0°0 - 0°0 :
Comments	: LC50 >100

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900624

TOXICITY TEST REPORT

	E	48:00	8.0 7.9 625 21.0	8.1 8.2 462 21.0	8.2 8.4 380 21.0	8.2 8.4 345 21.0	8.3 8.4 322 21.0	8.3 302 21.0
	1	24:00 4	20.5	20.5	20.5	20.5	20.5	20.5
00624	APSED	00:00	8.0 8.9 610 21.0	8.1 9.0 459 21.0	8.2 9.0 378 21.0	8.2 9.1 341 21.0	8.3 9.0 314 21.0	8.3 9.2 300 21.0
Sample Number: 03900624	umber: 0390 E L A		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)
Sample	TEST	,	100	20	25	13	9	Control

	TOXICITY TEST REPORT	Sample: 03900922	TOXICII	TOXICITY TEST PARAMETERS	METERS	
TEST CONDITIONS			Sample	Sample Number: 03900922	00922	
Company Region Industry	: Dofasco Hamilton, ONI (1460005) : West Central : Iron and Steel		TEST CONC.	В Г	E L A P S E D 00:00 2	PSED TIM 00:00 24:00 48:0
Control point Laboratory Sampling Method Sampled By	: Boiler House Sewer #2, (1200) : BAR : Grab : S. Ha	(1200)	100	pH 02 ppm cond. Temp(C)	8.1 9.1 533 20.5	20.5
Date Collected Received Tested			20	pH O2 ppm Cond. Temp(C)	8.2 9.0 419 20.5	20.5
Type of Bloassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	ethality Toxicity 988)	25	pH 02 ppm Cond	9.0	
Test Animal Weight(gm) Length(mm)	: D. magna :		13	Temp(C) PH 02 ppm	20.5	20.5
MORTALITY DATA				Temp(C)	20.5	20.5
CONC. E L A P S E D CONC. \$\times\$ 00:00 24:00 48:00	S E D T I M E 10 48:00	TOTAL MORTALITY %	•	pH 02 ppm Cond. Temp(C)	8.3 9.0 313 20.5	20.5
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000-	00000	Control	DH 02 ppm Cond. Temp(C)	8.3 301 20.5	20.5
48 Hour LC50 95% fid. limits	: Non-lethal					
Comments	: Non lethal					

COMPANY: Ivaco Rolling Mills, L'Original

(19720408)

SECTOR: Iron and Steel

REGION: Southeast

. SUMMARY

The data for three acute lethality trout bioassays conducted on effluent samples collected between November 1989 and July 1990 were submitted by Ivaco Rolling Mills. All three samples, including the Ministry audit sample, collected from the East Discharge Cooling Water effluent, were determined to have been nonlethal to test fish. The single sample of East Discharge FE effluent was also nonlethal.

East Discharge FE

06900115 sampled: 01/15/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: NO MORTALITY OR SUBLETHAL IMPAIRMENT OBSERVED

East Discharge CW

11900001 sampled: 04/09/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Tap filtered through charcoal and uv.

01900102 sampled: 06/04/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

11900035 sampled: 07/10/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: Tap through charcoal and UV

Northeast Discharge

Southeast Discharge

Mill Pond Outlet

Rain Gauge

Intake Water

Ivaco Rolling Mills (continued)

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MOVING AVERAGE SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

00:00 24:00 48:00 72:00 96:00 TIME ELAPSED Sample Number: 06900115 TEST CONC.

8.8. L.8.6	15.0	8.8.2	15.0	88.7	15.0	8.5		88.7	15.0	00000	* •	88.7	15.0
7.6	15.0	8.2	15.0	8.0	15.0	7.9	15.0	7.9	15.0	8.8	15.0	8.8.1	15.0
7.8	15.0	8.1	15.0	8.5	15.0	7.9	15.0	8.0	15.0	8.6	15.0	9.1	15.0
7.7	15.0	7.9	15.0	7.9	15.0	8.0	15.0	8.6	15.0	9.8	15.0	8.8	15.0
7.4	15.0	7.7	15.0	10.1	15.0	9.4	15.0	80 0 g	- 0	9.0	15.0	9.0	15.0
pH 02 ppm	Temp(C)	pH 02 ppm	Temp(C)	DH 02 ppm	Temp(C)	pH 02 ppm	Temp(C)	pH 02 ppm	Temp(C)	pH 02 ppm	Cond. Temp(C)	pH 02 ppm	Cond. Temp(C)
Control		10		20		30		20		9		100	

Sample: 11900001 TOXICITY TEST REPORT

TEST CONDITIONS						
Сомрапу	: 1va L'0	Ivaco Rolling Mills L'Original, ONI (19720408)	Mills			
Region Industry	Sou	Southeast Iron and Steel				
Control point	: Eas	East Discharge CW, (200)	CW, (200	0)		
Laboratory	Par	Paracel Lb				
Sampled By	. B. B.	Bradley				
Date Collected	170 :	06/60/50				
Received Tested	770 ::	04/09/90 04/12/90 at:	1030			
Type of Bioassay	••	STATIC (Protocol to d of liquid effl	letermine uents to	the ad fish.	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	, t
Test Animal Weight(gm) Length(mm)	. Rai	Rainbow trout				
MORTALITY DATA						
TEST E L A	APSED	1 1 M E		M	TOTAL MORTALITY	
0 00:00 %	1:00 02:0	00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00	00 48:00	72:00	00:96	ж
100 80 40 20 0	0000	0000	0000	0000	0000	0000

00	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Control	0	0	0	0	0	0	0	0	0

: 0.0 - 0.0 : : Non-lethal 95% fid. limits 96 Hour LC50

: Tap filtered through charcoal and uv.

Comments

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 11900001

1 M E 02:00 04:00 24:00 48:00 72:00 96:00 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	ELAPSED T	00:00 01:00	pH 9.7 . 02 ppm 8.6 cond. 3288 Temp(C) 15.0 15.0	pH 9.6 02 ppm 9.0 Cond. 2647 Temp(C) 15.0 15.0	pH 9.4 02 ppm 9.5 cond. 1492 Temp(C) 15.0 15.0	DH 8.9 02 ppm 9.5 Cond. 790 Temp(C) 15.0 15.0	pH 8.3 02 ppm 9.6 cond. 483 Temp(C) 15.0 15.0	PH 7.8 02 ppm 9.6 Cond. 318 Temp(C) 15.0 15.0	02 ppm 7.5
15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	I							-	
15.0 15.0 15.0 15.0		04:00	15.0	15.0	15.0	15.0	15.0	15.0	
		24:00	15.0	15.0	15.0	15.0	15.0	15.0	
		72:00	15.0	15.0	15.0	15.0	15.0	15.0	
15.0 15.0 15.0 15.0		96:00	8.1 9.7 3110 15.0	8.0 9.5 2469 15.0	7.8 9.3 1369 15.0	7.7 9.4 717 15.0	7.6 9.6 432 15.0	7.6 9.5 280 15.0	7.5

TOXICITY TEST PARAMETERS

7.7 9.9 255 15.0 7.8 9.9 540 15.0 8.0 9.7 2750 15.0 8.0 9.9 1900 15.0 7.9 9.8 1270 15.0 7.8 9.8 1020 15.0 7.8 9.9 780 15.0 00:00 00:30 01:00 24:00 46:00 72:00 96:00 7.8 9.6 540 15.0 7.7 9.7 260 15.0 8.0 9.5 2800 15.0 8.0 9.7 1900 15.0 7.9 9.5 1290 15.0 7.9 9.6 1030 15.0 7.8 9.6 790 15.0 7.8 9.3 540 15.0 7.8 9.1 260 15.0 7.9 9.1 2770 15.0 7.9 9.3 1900 15.0 7.8 9.3 1290 15.0 7.8 9.3 1030 15.0 7.8 9.2 780 15.0 8.2 9.3 2750 15.0 7.8 9.6 540 15.0 7.9 260 15.0 7.9 9.6 1900 15.0 7.8 9.6 1280 15.0 7.8 9.6 1020 15.0 7.8 9.6 780 15.0 9.6 8.7 2750 15.0 8.8 9.1 1870 8.5 8.6 1280 15.0 8.3 9.0 1020 15.0 8.0 9.1 780 15.0 7.8 9.1 540 15.0 7.7 9.3 210 15.0 TIME ELAPSED 9.3 8.4 2160 15.0

Control Date Control Control	TEST CONDITIONS			1	3500
thod : East Discharge CW, (200) thod : Single grab	Company Region Industry		Sample N TEST CONC.	Umber: 1190	L A P S E 00:00
### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 ### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 #### 1200 ##### 1200 ##### 1200 ##################################	Control point Laboratory Sampling Method Sampled By			pH 02 ppm Cond. Temp(C)	9.4 8.2 745 15.0
### STATION (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). #### Rainbow trout ###################################	Date Collected Received Tested	07/10/90 07/10/90 07/12/90 at:		pH 02 ppm cond. Temp(C)	9.2 8.9 621 15.0
ATA E L A P S E D T I M E *00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Type of Bloassay			pH 02 ppm cond.	8.6
ELAPSED TIME TOTAL MORTALITY	Weight(gm) Length(mm) MORIALITY DATA			pH 02 ppm Cond. Temp(C)	8.8 8.8 15.0
trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		ED TIME TOTAL MORTALITY		pH 02 ppm Cond. Temp(C)	8.8 8.9 164 15.0
: Non-lethal	00000	0000		pH 02 ppm Cond. Temp(C)	7.7 8.7 135 15.0
: Non-lethal : 0.0 - 0.0	000	000	Control	pH 02 ppm cond. Temp(C)	7.8 8.7 98 15.0
	96 Hour LC50 95% fid. limits	Non-lethal 0.0 - 0.0			

T I M E:	7.9 88.4 706 5.0	7.9 8.4 5.98 5.0	7.8 8.6 353 5.0	8.4 2231 5.0	7.5 7.6 169 5.0	88.1 1144 5.0	7.6 8.8 103 5.0
APSED T 00:00 96:00	9.4 8.2 745 15.0	9.2 8.9 621 15.0	8.6 8.9 359 15.0	8.2 8.8 234 15.0	7.8 8.9 164	8.7 135 15.0	7.6 8.7 98 15.0
EL	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)					
TEST CONC.	100	80	07	20	10	ľ	Control

COMPANY: Ivaco Rolling Mills, L'Original

(19720408)

Iron and Steel SECTOR:

REGION: Southeast

SUMMARY

Data for three Daphnia magna acute lethality toxicity tests conducted on samples of effluent from east discharges (100 and 200) collected between November 1989 and April 1990 were submitted by Ivaco Rolling Mills of L'Orignal. The sample from the east discharge process effluent taken in January was toxic to Daphnia with a 48 h LC50 = 80.6%. The sample from the east discharge cooling water collected in April was not acutely lethal to Daphnia. The data submitted for the July sample was returned for resubmission and has not yet been resubmitted. A Ministry audit sample tested in June had an LC50 > 100 %.

East Discharge FE

06900116 sampled: 01/15/90 LC50: 80.6 %

95% fid. limits: 65.0 - 100.0 %

comments: 100% MORTALITY IN FULL STRENGTH EFFLUENT

East Discharge CW

11900006 sampled: 04/09/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments:

02900102 sampled: 06/04/90 LC50: >100 %

95% fid. limits: 0.0 -0.0 %

comments: MISA Audit; Many Floaters; Very High Cond.

11900035 sampled: 07/10/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments:

Northeast Discharge

Southeast Discharge

Mill Pond Outlet

Ivaco Rolling Mills (continued)

Rain Gauge
Intake Water

TOXICITY TEST PARAMETERS

M E 8:00	8.3 7.6 376 20.0	8.3 8.3 521 20.0	8.3 8.4 647 20.0	8.3 8.1 793 20.0	8.4 7.9 1029 20.0	8.5 7.8 1238 20.0	8.7 7.7 1711 20.0
D TIME 24:00 48:00	20.02	20.02	20.0	20.02	20.02	20.0	20.0
A P S E D 00:00 2	88.0 395 20.0	8.4 8.3 528 20.0	8.6 8.0 654 20.0	8.8 8.3 810 20.0	9.1 8.5 1049 20.0	9.2 8.9 1245 20.0	9.5 1703 20.0
n T	pH 02 ppm cond. Temp(C)						
TEST CONC.	Control	10	20	30	20	65	100

MISA Daphnia

TEST CONDITIONS		
Сопрапу	: Ivaco Rolling Mills	
Region Industry	(1972/408) : Southeast : Iron and Steel	
Control point	: East Discharge CW, (200)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	Paracel 1b grab 8. Bradley 04/09/90 04/11/90 at: 1430	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	: D. magna	
MORTALITY DATA		
TEST E L A P CONC.	SED TIME TOTAL MORTALITY	
x 00:00 48:00		**
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		00000
48 Hour LC50	: Non-lethal	
95% fid. limits	× 0.0 - 0.0 :	
Comments		

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 11900006

TOXICITY TEST REPORT

	I M E							
	T 0	48:00	9.2 6.3 3691 20.0	8.7 6.9 2410 20.0	8.2 6.9 1458 20.0	8.0 6.9 967 20.0	7.9 6.7 663 20.0	7.8 6.7 535 20.0
19000061	LAPSE	00:00	9.8 9.2 3231 20.0	9.5 9.0 2138 20.0	9.2 8.9 1283 20.0	8.9 8.3 833 20.0	8.5 8.8 546 20.0	8.1 8.7 405 20.0
Number: 11900006	Ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST	, 2 2 3	100	09	30	15	īv	Control

TOXICITY TEST PARAMETERS

Sample: 02900102

TOXICITY TEST REPORT

I M E

TEST CONDITIONS		- James	Committee Missiphers 11000025	300025	
Company		TEST CONC.	E L	ELAPSED T 00:00 48:00	1 (
Industry					
Control point Laboratory Sampling Method Sampled By	: East Discharge LW, (200) : Paracel Lb : single grab : B. Bradley	100	pH 02 ppm Cond. Temp(C)	9.5 8.5 764 20.0	8.3 6.5 781 20.0
Date Collected Received Tested	: 07/10/90 : 07/10/90 : 07/11/90 at: 1200	09	pH 02 ppm Cond. Temp(C)	9.2 8.7 596 20.0	7.9 6.2 624 20.0
Type of Bloassay	: SIALIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna	30	pH 02 ppm cond. Temp(C)	8.9 8.8 472 20.0	7.7 5.8 508 20.0
Weight(gm) Length(mm) MORTALIIY DATA		15	pH 02 ppm cond. Temp(C)	8.5 9.0 405 20.0	7.7 5.8 441 20.0
TEST E L A P S CONC. x 00:00 48:00	SED TIME TOTAL MORTALITY X	ī.	pH 02 ppm Cond. Temp(C)	8.2 9.2 361 20.0	7.6 5.4 415 20.0
100 60 30 30 15 5 5 Control 0	00000	Control	of ph Cond. Temp(C)	8.0 9.3 329 20.0	7.7 5.9 384 20.0
48 Hour LC50 95% fid. limits	: Non-lethal : 0.0 - 0.0 %				

COMPANY: Lasco, Whitby

(26890301)

SECTOR: Iron and Steel

REGION: Central

SUMMARY

The data for twelve acute lethality trout bioassays conducted on samples of final effluent collected between November 1989 and October 1990 were submitted by LASCO. All twelve samples have not been included in the database after an inspection of their contract laboratory revealed the tests were not conducted according to Ministry protocol. Two Ministry audit samples, collected in March and August, were determined to have been nonlethal to test fish.

South Pond

01900036 sampled: 03/12/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA audit sample.

01900164 sampled: 08/01/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

Storm Water

Waste Disposal Site

Rain Gauge

Intake Water

TOXICITY TEST PARAMETERS

Sample: 01900036

TOXICITY TEST REPORT

TEST CONDITIONS

pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C)
pH 02 ppm Cond. Temp(C) 1 PH 02 ppm Cond. Temp(C) Cond.
30 pm 02 ppm Cond. Temp(C)
20 pH 02 ppm Cond.
10 pH O2 ppm Cond. Temp(C)
Control pH 02 ppm Cond.
(alabe)

7.7 8.9 335 15.0

7.8 8.9 340 15.0

7.7 9.1 315 15.0

7.7 9.2 320 15.0

7.7 9.3 305 15.0

7.8 9.2 305 15.0

7.8 9.3 305 15.0

7.8 9.4 295 15.0

7.8 9.1 295 15.0

7.9 295 15.0

7.8 9.4 285 15.0

7.6 8.9 295 15.0

7.8 9.3 290 15.0

7.8 9.3 280 15.0

7.6 9.0 285 15.0

7.8 9.1 280 15.0

7.8 9.0 215 15.0

7.7 9.0 270 15.0

347



COMPANY: Lasco, Whitby

(26890301)

SECTOR: Iron and Steel

REGION: Central

SUMMARY

Results for twelve Daphnia magna acute lethality toxicity tests conducted on samples of final effluent collected between November 1989 and October 1990 were submitted by LASCO of Whitby. All 12 samples results were reject after an April 1991 laboratory inspection revealed that the contract lab conducting these tests was not following Ministry protocols. One Ministry audit sample collected in March had a 48 h LC50 > 100 % and one audit conducted in August was not acutely lethal to Daphnia.

South Pond

02900036 sampled: 03/12/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

02900164 sampled: 08/01/90 LC50: 0.0 - 0.0 %

95% fid. limits: 0.0 - 0.0 %

comments: INVALID > 10% Control Mortality

Storm Water

Waste Disposal Site

Rain Gauge

Intake Water

MISA Daphnia

TEST CONDITIONS	
Company	: Lasco Whitby, ONT
Region Industry	(26890301) : Central : Iron and Steel
Control point	: South Pond, (100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	MOE Grab 1. Dezaney 03/12/90 1. 03/13/90 1. 03/14/90 at: 1347
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	: D. magna
MORTALITY DATA	
TEST ELAPS CONC.	E D T I M E HORTALITY
x 00:00 01:00	24:00 48:00 %
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
48 Hour LC50	: >100%
95% fid. limits	× 0.0 - 0.0 :
Comments	: MISA Audit

SLOPE of Mortality Curve : LC50 Calculated By : None

TOXICITY TEST PARAMETERS

Sample: 02900036

TOXICITY TEST REPORT

Sample Number: 02900036

48:00	7.9 7.6 431 20.0	7.9 7.7 381 20.0	7.9 8.0 344 20.0	7.9 8.2 324 20.0	7.8 8.1 312 20.0	7.6 8.2 303 20.0
P S E D T I M E 00:00 01:00 24:00	20.02	20.0	20.0	20.0	20.0	20.0
D1:00	20.02	20.0	20.0	20.0	20.0	20.0
L A P S E 00:00	8.6 6.7 426 20.0	8.3 376 20.0	8.2 8.7 340 20.0	7.9 8.9 320 20.0	7.7 8.9 311 20.0	7.5 9.1 303 20.0
E E	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	09	30	15	S	Control

TOXICITY TEST PARAMETERS

Sample: 02900164

TOXICITY TEST REPORT

≥€



COMPANY: Stelco Steel Hilton Works, Hamilton

(950006)

SECTOR: Iron and Steel REGION: West Central

SUMMARY

The data for 76 acute lethality trout bioassays conducted on effluent samples collected between November 1989 to February 1991 were submitted by Stelco Steel Hilton Works. The company was not in operation during August and September, therefore no data have been submitted for these months. All six samples of West Side Open Cut effluent were determined to have been not acutely lethal to test fish. All six samples, as also with the Ministry audit sample, of Northwest Outfall effluent were determined nonlethal. Nine of ten samples of North Outfall were determined nonlethal, while the remaining sample produced a 96 h LC50 > 100 %. All four samples of East Side Filter were determined nonlethal to fish. Three of ten samples collected from the #1 60 " Sewer were determined to have been acutely lethal to test fish. Samples collected in December 1989, February 1990, and March 1990, produced 96 h LC50s of 80.6 %, 54.4 %, and 75.0 % respectively. An audit sample collected from this site was determined to have been nonlethal. Eight of nine samples collected from the # 2 Rod Mill were determined to have been nonlethal, while the sample collected in November had a 96 h LC50 > 100 %. An audit sample collected in March was nonlethal. Five of six samples collected from the 20 inch Mill were determined nonlethal while the sample collected in April 1990 had a 96 h LC50 > 100 %. All three samples of # 2 60 " Sewer effluent, as also with the Ministry audit sample, were determined to have been nonlethal. A single Intake water sample was tested and determined nonlethal to test fish. All eleven samples of East Side Filter Stage 1 effluent, as also with the Ministry audit sample, were determined to have been not acutely lethal to trout. Six of seven samples collected from East Side Filter Stage 2 effluent were determined nonlethal, while the April 1990 sample produced a 96 h LC50 > 100 %. The Ministry audit, sampled during March 1990, was determined nonlethal to test fish.

West Side Open Cut

03900031 sampled: 01/16/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

01900057 sampled: 03/28/90 LC50: 0.0 - 0.0 %

95% fid. limits: 0.0 - 0.0 %

comments: INVALID - 20% Control Mort. MISA Audit

03900262 sampled: 04/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: non lethal

03900350 sampled: 05/01/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non lethal

03900439 sampled: 06/05/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900591 sampled: 07/11/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; 20% mort @ 100%conc

03900680 sampled: 08/14/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Single Concentration Test; non-lethal

Northwest Outfall

03900032 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

01900056 sampled: 03/28/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900263 sampled: 04/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non lethal

03900367 sampled: 05/08/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900440 sampled: 06/05/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non lethal

03900556 sampled: 07/03/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration Test; 5% mort @ 100%conc

03900681 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

North Outfall

03890263 sampled: 11/14/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890320 sampled: 12/05/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900033 sampled: 01/16/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900088 sampled: 02/06/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: Single Concentration Test

03900175 sampled: 03/06/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

01900058 sampled: 03/28/90 LC50: 0.0 - 0.0 %

95% fid. limits: 0.0 - 0.0 %

comments: INVALID-30% Control Mort. MISA Audit

03900264 sampled: 04/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non lethal

03900348 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900441 sampled: 06/05/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single conc. test; non lethal

03900552 sampled: 07/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

03900682 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

East Side Filter

03890319 sampled: 12/05/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900028 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

non-lethal

03900086 sampled: 02/06/90 non-95% fid. limits: 0.0 - 0.0 % comments: Single Concentration Test

03900085 sampled: 02/06/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Single Concentration Test

#1 60 inch Sewer

03890268 sampled: 11/14/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890318 sampled: 12/05/89 LC50: 80.6 %

95% fid. limits: 65.0 - 100.0 %

comments:

03900067 sampled: 01/24/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900091 sampled: 02/06/90 LC50: 54.4 %

95% fid. limits: 42.4 - 69.6 % slope: 4.6

comments:

03900176 sampled: 03/06/90 LC50: 75.0 %

95% fid. limits: 61.4 - 91.4 % slope: 8.1

comments: Lethal

01900050 sampled: 03/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900268 sampled: 04/03/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900344 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900442 sampled: 06/05/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900551 sampled: 07/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900683 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

#2 Rod Mill

03890266 sampled: 11/14/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890321 sampled: 12/05/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900030 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900089 sampled: 02/06/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test

03900179 sampled: 03/06/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single test concentration; Non lethal

01900055 sampled: 03/28/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900269 sampled: 04/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; non lethal

03900343 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900443 sampled: 06/05/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

03900550 sampled: 07/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

20 inch Mill

03890267 sampled: 11/14/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890322 sampled: 12/05/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900029 sampled: 01/16/90 non-1 95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

03900090 sampled: 02/06/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Single Concentration Test

03900180 sampled: 03/06/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single test concentration; Non lethal

03900270 sampled: 04/03/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; 5% mort. @ 100%

#2 60 inch Sewer

01900049 sampled: 03/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900267 sampled: 04/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: non lethal

03900557 sampled: 07/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900684 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

East Side Filter OW

Rain Gauge

Intake Water

03900189 sampled: 03/09/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

East Side Filter Stage 1

03890264 sampled: 11/14/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890323 sampled: 12/05/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Nonlethal

03900027 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Nonlethal

03900177 sampled: 03/06/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single test concentration; Non lethal

01900053 sampled: 03/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900265 sampled: 04/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non lethal

03900345 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

03900444 sampled: 06/05/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

03900554 sampled: 07/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

03900685 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

East Side Filter Stage 2

03890265 sampled: 11/14/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900178 sampled: 03/06/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single test concentration; Non lethal

01900052 sampled: 03/26/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900266 sampled: 04/03/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; 10% mort. @ 100%

03900346 sampled: 05/01/90 non-lethal

0.0 - 0.0 % 95% fid. limits:

comments: Non lethal; single concentration test

03900445 sampled: 06/05/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration test; Non lethal

03900555 sampled: 07/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration Test; Non lethal

03900686 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

TOXICITY TEST PARAMETERS

Sample: 03900031

TOXICITY TEST REPORT

Sample Number: 03900031

TEST E L A P S E D T I M E CONC. % 00:00 24:00 48:00 72:00 96:00

8.1 9.0 770 14.5	8.3 9.2 693 14.5	8.3 9.1 639 14.5	8.4 9.3 591 14.5	8.3 8.9 576 14.5	8.4 9.1 569 14.5	8.5 558 14.5
14.0	14.0	14.0	14.0	14.0	14.0	14.0
14.0	14.0	14.0	14.0	14.0	14.0	14.0
15.0	15.0	15.0	15.0	15.0	15.0	15.0
8.6 9.9 755 15.0	8.3 9.6 685 15.0	8.1 9.3 633 15.0	8.0 9.3 590 15.0	8.0 9.2 572 15.0	7.9 9.0 560 15.0	8.9 552 15.0
pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	02 ppm Cond. Temp(C)
100	65	70	20	10	īv	Control

8999898 Sample: 01900057 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). : INVALID - 20% Control Mort. MISA Audit TOTAL MORTALITY 00:00 01:00 02:00 25:00 46:00 71:00 96:00 Stelco Steel Hilton Works Hamilton, ONT (950006) West Side Open Cut, (100) 1200 TOXICITY TEST REPORT 0.0 MOE Grab Mark Smithson 03/28/90 03/29/90 04/01/90 at: 1 : Rainbow trout 0740--0 : West Central : Iron and Steel TIME 0.0 0.0 ELAPSED 000000 000000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 000000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 65 40 30 20 10 Control Company

TEST CONC. ж

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

		00:96	8.0 10.0 615 15.0	8.0 10.1 435 15.0	8.0 10.1 410 15.0	8.0 9.9 505 15.0	7.8 9.8 345 15.0	7.8 9.9 305 15.0	7.7 9.8 255 15.0
		71:00	8.1 10.0 670 15.0	8.1 10.0 530 15.0	8.1 10.0 435 15.0	10.0 390 15.0	7.9 9.8 350 15.0	7.9 9.9 315 15.0	8.0 10.0 265 15.0
		00:95	10.0 660 15.0	8.0 9.9 510 15.0	8.0 10.0 435 15.0	8.0 10.0 385 15.0	7.8 9.8 345 15.0	7.9 9.9 310 15.0	7.9 9.8 270 15.0
		25:00 46:00	8.1 9.8 670 15.0	8.1 9.8 530 15.0	8.1 9.8 435 15.0	8.0 390 15.0	7.9 9.7 345 15.0	7.9 9.7 315 15.0	7.9 9.8 265 15.0
	TIME	01:00 02:00	8.2 10.3 660 15.0	8.0 10.1 530 15.0	7.9 10.2 435 15.0	7.9 10.3 395 15.0	7.8 10.2 345 15.0	7.8 10.1 270 15.0	7.6 10.3 270 15.0
1900057	LAPSED	0 00:00	10.1 670 15.0						
Sample Number: 01900057	EL		pH 02 ppm cond. Temp(C)	02 ppm Cond. Temp(C)					
Sample	TEST	ž.	100	92	07	30	20	10	Control

TOXICITY TEST PARAMETERS

545 14.0 8.2 8.4 539 14.0
14.5
15.0
14.5
7.56 15.0 7.9 8.9 538 538
Cond. Temp(C) O2 ppm Cond. Temp(C)
Control

TOXICITY TEST PARAMETERS

Sample: 03900350

TOXICITY TEST REPORT

00:00 24:00 48:00 72:00 96:00

8.2 9.7 731 14.5

14.5

14.5

8.5 9.7 657 14.5

14.5

TEST CONDITIONS		Same	Committee Numbers 03000350	200		
Company	: Stelco Steel Hilton Works Hamilton, ONT (OSOOOK)	TEST	E L A	ELAPSED		TIME
Region Industry	: West Central : Iron and Steel	,		00:00 24:00 48:00	74:00	48:00 7
Control point Laboratory Sampling Method Sampled By	: West Side Open Cut, (100) : BAR : Grab : D. Johnston	100	pH 02 ppm Cond. Temp(C)	8.2 9.8 831 15.5	15.0	15.0
Received Tested	: 05/01/90	\$9	pH 02 ppm cond. Temp(C)	8.2 9.9 728 15.5	15.0	15.0
Aprend to ad	'STAILS' (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm	6.6		
Test Animal Weight(gm)	: Rainbow trout		Temp(C)	15.5	15.0	15.0
Length(mm) MORTALITY DAT <u>A</u>	••	50	pH O2 ppm Cond. Temp(C)	8.0 9.9 603 15.5	15.0	15.0
TEST E L A P	SED TIME TOTAL HORTALITY	10	pH 02 ppm	9.8		
x 00:00 24:00	3 48:00 72:00 96:00		Cond. Temp(C)	15.5	15.0	15.0
100 65 70 10 10		ιn	pH 02 ppm cond. Temp(C)	8.0 9.9 562 15.5	15.0	15.0
	0 0 0	Control	pH O2 ppm Cond. Temp(C)	8.0 9.2 546 15.8	15.0	15.0
96 Hour LC50	: Non-lethal					
95% fid. limits	× 0.0 - 0.0 :					
Comments	: Non lethal					

8.5 9.9 567 14.5

14.5

14.5

14.5

8.5 9.7 605 14.5

14.5

TOXICITY TEST PARAMETERS

	00:90	8.1 8.7 777 16.0	8.0 8.1 693 16.0	7.9 7.4 632 16.0	8.3 8.6 583 16.0	8.0 7.3 563 16.0	8.3 8.2 548 16.0	8.2 8.0 535 16.0
	24:00 48:00 72:00 96:00	16.0	16.0	16.0	16.0	16.0	16.0	16.0
E E	8:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
1	7 00:57	15.5	15.5	15.5	15.5	15.5	15.5	15.5
APSE	00:00	8.1 9.1 787 15.0	8.0 9.0 702 15.0	8.8 8.8 640 15.0	7.9 8.8 592 15.0	7.9 8.8 569 15.0	7.8 8.4 557 15.0	7.8 8.5 542 15.0
EL		pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH O2 ppm Cond. Temp(C)
TEST	CONC.	100	92	40	20	10	ın	Control

MISA Trout

Sample Number: 03900591 2200 : Single Concentration Test;20% mort a 100%conc : STAILC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY Stelco Steel Hilton Works Hamilton, ONT (950006) : West Side Open Cut, (100) at: 1320 0.0 00:00 24:00 48:00 72:00 96:00 : Rainbow trout 2000 : West Central : Iron and Steel ELAPSED TIME BAR Grab P. Peidl 07/11/90 07/12/90 2000 : >100% 0.0 Laboratory Sampling Method Sampled By Date Collected Received 95% fid. limits Type of Bioassay TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 0000 Test Animal Weight(gm) Length(mm) Region Industry Comments 100 100 Control Control Company TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900591

TOXICITY TEST REPORT

00:96	8.1 8.9 725 15.5	8.1 8.8 716 15.5	8.2 8.5 7.49 7.50	8.8 8.8 558 7.51
72:00	15.0	15.0	15.0	15.0
T I M E	15.5	15.5	15.5	15.0 15.5
D T 24:00	15.0	15.0	15.0	15.0
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.1 9.2 708 15.5	9.2 708 15.5	7.9 8.7 539 15.5	7.9 8.7 539 15.5
ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

00:96	8.1 9.3 15.5	8.1 9.4 1111 15.5	8.3 9.1 539 15.5	8.3 9.2 535 15.5
I M E 48:00 72:00 96:00	16.0	16.0	16.0	16.0
I M E	16.0	16.0	16.0	16.0
	15.5	15.5	15.5	15.5
LAPSED T 00:00 24:00	8.4 8.9 1092 16.0	8.4 8.9 1092 16.0	7.8 8.3 529 16.0	7.8 8.3 529 16.0
ដា	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900032

TOXICITY TEST REPORT

TEST CONDITIONS

Sample Number: 03900032 TEST		100 pH 8.1 02 ppm 9.9 cond. 810 15.0 14.0 14.0 14.5	65 pH 8.0 8.3 8.3 Cond. 584 603 Fom (15.0 14.0 14.5	40 pH 8.0 8.3 8.9 Cond. 569 15.0 14.0 14.0 14.5	20 pH 8.0 8.1 8.3 8.3 8.3 8.3 8.3 Cond. 556 15.0 14.0 14.0 14.5	10 pH 7.9 8.3 02 ppm 9.3 8.6 cond. 554 Femp(C) 15.0 14.0 14.0 14.5	5 pH 7.9 8.4 0.2 ppm 9.3 552 cond. 552 15.0 15.0 14.0 14.0 14.5	Control pH 7.9 8.4 0.2 ppm 9.3 5.0 16.0 14.0 14.0 14.5 14.5	
Company : Stelco Steel Hilton Works Hamilton, ONT (950006) Region : West Central Industry : Iron and Steel	Control point : Northwest Outfall, (200)	Laboratory : BAR Sampling Method : Grab Sampled By : P. Peidl Date Collected : 01/16/20	: 01/17/90 : 01/17/90		th(mm) : ALITY DATA	00:00 24:00 48:00 72:00 96	65000000000000000000000000000000000000		

15.5

531.

9.52.5

TIME

ELAPSED

Sample Number: 01900056

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 01900056

TOXICITY TEST REPORT

TEST CONDITIONS

Company

8. 42. 15.

7.00 %

134.

726.5

MISA Trout

0000 : STAILC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). : Single concentration test; non lethal TOTAL MORTAL I TY : Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel : Northwest Outfall, (200) at: 1120 00:00 24:00 48:00 72:00 96:00 0.0 0000 : Rainbow trout ELAPSED TIME : Non-lethal P. Peidl 04/03/90 04/03/90 04/04/90 0000 0.0 Grab 0000 0000 Laboratory Sampling Method Sampled By Date Collected Received Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 0000 Test Animal Weight(gm) Length(mm) Region Industry Comments 100 100 Control Control Company TEST CONC. ж

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900263

TOXICITY TEST REPORT

Sample Number: 03900263

00:96	8.1 9.6 752 14.0	8.1 9.8 753 14.0	8.3 9.4 523 14.0	8.4 9.7 529 14.0
72:00	14.5	14.5	14.0 14.5	14.5
T I M E	14.0 14.5	14.5 14.0 14.5	14.0	14.5 14.0 14.5
D T	14.5	14.5	14.5	14.5
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.5 9.7 741 15.0	8.5 9.7 741 15.0	7.9 9.1 527 15.0	7.9 9.1 527 15.0
ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03900367

TOXICITY TEST REPORT

	Sample Number: 03900367	03900367				
Company : Stelco Steel Hilton Works Hamilton, ONI		ELAPSED	₩	I M E		
Region : West Central Industry : Iron and Steel		00:00	00:00 24:00 48:00 72:00 96:00	48:00	72:00	00:96
Control point : Northwest Outfall, (200) Laboratory : BAR Sampling Method : Grab Sampled By : P. Piedl	100 pH O2 ppm Cond.	8.1 9.6 77, 15.0	16.0	15.0	14.0	8.2 9.4 763 14.0
** ** **	65 pH 02 ppm Cond Cond	8.0 9.4 9.4	16.0	15.0	14.0	8.4 9.5 686
Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	40 pH 02 ppm Cond.					8.5 9.5 623
Test Animal : Rainbow trout Weight(gm) : Length(mm) :	20 pH		16.0	15.0	14.0	14.0
MORTALITY DATA	02 ppm Cond. Temp(C)	593	16.0	15.0	14.0	582 14.0
TEST ELAPSED TIME TOTAL CONC.	10 pH 02 ppm	7.9				9.4
x 00:00 24:00 48:00 72:00 96:00 x	Temp(C)		16.0	15.0	14.0	14.0
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 pH 02 ppm Cond. Temp(C)	7.9 9.0 559 (:	16.0	15.0	14.0	8.5 9.6 547 14.0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control pH 02 ppm Cond. Temp(C)	7.9 8.8 548 548	16.0	15.0	14.0	8.5 9.6 526 14.0
96 Hour LC50 : Non-lethal						
95% fid. limits : 0.0 - 0.0 %						
Comments : Non lethal						

TEST CONDITIONS		1 6
Сопрапу	: Stelco Steel Hilton Works Hamilton, ONT	Ser TES
Region Industry	: West Central : Iron and Steel	3
Control point	: Northwest Outfall, (200)	-
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 06/05/90 : 06/06/90 at: 1325	
Type of Bioassay	: STATIC (Protocol to determine the scute lethality of liquid effluents to fish. OME, 1983).	
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	
MORTALITY DATA		
CONC.	SED TIME TOTAL MORTALITY	
x 00:00 24:00	24:00 48:00 72:00 96:00 %	
100 0 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Co
96 Hour LC50	: Non-lethal	
95% fid. limits	% 0°0 - 0°0 :	
Comments	: Non lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900440

TOXICITY TEST REPORT

		96:00	8.0 8.6 725 15.5	8.5 658 15.5	8.1 8.4 613 15.5	8.3 8.2 577 15.5	8.3 8.1 557 15.5	8.1 7.4 551 15.5	8.3 540 5.5
		72:00 96:00	16.0	16.0	16.0	16.0	16.0	16.0	16.0
		48:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0.
			15.5	15.5	15.5	15.5	15.5	15.5	15.5
077006	~	00:00 24:00	8.1 9.1 734 15.0	8.0 9.0 670 15.0	7.9 8.8 620 15.0	7.9 8.8 584 15.0	7.9 8.4 563 15.0	7.8 8.4 555 15.0	7.8 8.3 546 15.0
Sample Number: 03900440	EL		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
Sample	TEST CONC.	ж	100	99	70	20	10	in.	Control

TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

8.2 8.9 531 15.5 8.2 8.9 527 15.5 7.8 8.8 660 15.5 7.6 8.1 663 13.5 00:00 24:00 48:00 72:00 96:00 16.0 16.0 15.0 15.5 16.0 16.0 15.0 15.5 15.5 15.5 TIME 15.0 15.0 ELAPSED 8.0 9.4 682 15.5 8.0 9.4 682 15.5 7.9 9.7 536 15.5 7.9 9.7 536 15.5 pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) Temp(C) pH 02 ppm Cond.

MISA Trout

0000 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY : Single Concentration Test; non-lethal Stelco Steel Hilton Works Hamilton, ONT (950006) Northwest Outfall, (200) : BAR : Grab : 1, Hibberd : 08/14/90 : 08/14/90 at: 1205 00:00 24:00 48:00 72:00 96:00 West Central Iron and Steel : Rainbow trout 000 THE : Non-lethal 0000 ELAPSED 0000 0000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 0000 Test Animal Weight(gm) Length(mm) Region Industry 100 100 Control Comments Company TEST CONC. 36

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900681

TOXICITY TEST REPORT

	00	8.0 9.2 609 15.5	7.9 8.9 608 15.5	woon	woon
	36:1	80.20		8.3 9.0 540 15.5	8.3 9.0 540 15.5
	72:00	16.0 16.0	16.0	16.0	16.0
	T I M E	16.0	16.0	16.0	16.0
	D T 24:00	15.5	15.5	15.5	15.5
03900681	ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.3 8.9 593 16.0	8.3 8.9 593 16.0	7.8 8.0 533 16.0	7.8 8.0 533 16.0
Sample Mumber: 03900681	ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	100	Control	Control pH 02 ppm Cond. Temp(C)

TEST CONDITIONS			1
	: Stelco Steel Hilton Works Hamilton, ONT		SB
	: West Central : Iron and Steel		28
Control point	: North Outfall, (400)		J
Laboratory Sampling Method Sampled By Date Collected Received Tested	. BAR Grab P. Peidl 11/14/89 11/14/89 11/16/89 at: 1000		S
Type of Bioassay	: STATIC (Protocol to determine th of liquid effluents to fi	the acute lethality fish. OME, 1983).	
Test Animal Weight(gm) Length(mm)	: Rainbow trout :		
MORTALITY DATA			
ELAF	PSED TIME	TOTAL HORTALITY	
00:00	00:00 04:00 24:00 48:00 72:00 96:00	><	
000000		20000	
96 Hour LC50	: Non-lethal		
95% fid. limits	% 0°0 - 0°0 :		
	: Non lethal		

TOXICITY TEST PARAMETERS

Sample: 03890263

TOXICITY TEST REPORT

sample Number: 03890263

00:00 04:00 24:00 48:00 72:00 96:00 ELAPSED TIME CONC.

9.2	0.0	9.1 563 15.0	8.4 9.2 569 15.0	8.4 9.3 572 15.0	8.1 9.0 572 15.0	7.8 8.6 574 15.0
\$	0.	14.0	14.0	14.0	14.0	14.0
2		14.0	14.0	14.0	14.0	14.0
2	2	14.0	14.0	14.0	14.0	14.0
÷	6.4	14.5	14.5	14.5	14.5	14.5
9.8	7.0	9.0 562 15.5	7.8 9.0 559 15.5	7.9 9.1 557 15.5	7.9 9.3 554 15.5	8.0 9.6 553 15.5
pH 02 ppm Cond.	(a)dual	pn 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
Control	Ç	2	20	07	9	100

	: Stelco Steel Hilton Works Hamilton, ONT	Sample
Region Industry	(young) : West Central : Iron and Steel	CONC.
Control point :	: North Outfall, (400)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	EAR Grab P. Peidl 12/05/89 12/05/89 12/06/89 at: 1200	59
Type of Bioassay :	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07
Test Animal Weight(gm)	Rainbow trout	20
HORTALITY DATA		
TEST E L A P S CONC.	ED TIME TOTAL MORTALITY	10
x 00:00 24:00	00:00 24:00 48:00 72:00 96:00	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	Contro
96 Hour LC50	Non-lethal	
95% fid. limits :	0°0 - 0°0 ×	
Comments	: Non-lethal	

8.2 9.5 587 14.5

14.5

14.5

14.5

7.8 9.4 576 15.0

pH 02 ppm cond. Temp(C)

14.5 14.5

14.5

8.0 9.9 582 15.0

pH 02 ppm Cond. Temp(C)

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

Le Number: 03890320

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03890320

TOXICITY TEST REPORT

8.3 9.4 574 14.5

14.5

14.5

14.5

9.2 573 15.0

pH 02 ppm Cond. Temp(C) 8.2 9.4 580 14.5

14.5

14.5

14.5

7.7 9.3 571 15.0

pH 02 ppm cond. Temp(C) 8.3 9.1 569 14.5

14.5

14.5

14.5

7.7 8.8 566 15.0

pH 02 ppm Cond. Temp(C)

Jo.

8.4 9.4 563 14.5

14.5

14.5

14.5

7.7 9.2 570 15.0

pH 02 ppm Cond. Temp(C)

Sumple Number: 03900033 Sumple Number: 0	TOXICITY TEST REPORT Sample: 03900033		TOXICITY TEST PARAMETERS	ETERS				
## # ## ## ## ## ## ## ## ## ## ## ## #	CONDITIONS	Sar	note Number: 0390	0033				
See Fear Fear Fear Fear Fear Fear Fear Fe	••	1E.	ш	PSED	1	m E		
## North Outfall, (400) ### 190			V	00:00	7:00 7	8:00 2	2:00 %	9:00
Cond. Cond	: North Outfall,			8.7				6.2
STATIC Cond. 15.0	** ** **			9.2 602 15.0	15.0	15.0	14.0	8.8 610 14.5
## Simple of Liquid effluents to fish. OME, 1983). Rainbow trout	: 01/16/90 : 01/16/90 : 01/17/90 at:			8.4 9.1 584 15.0	15.0	15.0	14.0	8.9 590 14.5
Selection trout 1	: STATIC (Protocol of liquid			8.2 8.9 572				8.1 8.7 578
1	: Rainbow tr		Temp(C)	15.0	15.0	15.0	14.0	14.5
F L A P S E D T I M E				8.8 562				8.8.2
F L A P S E D T I M E	MORTALITY DATA		Temp(C)	15.0	15.0	15.0	14.0	14.5
00:00 24:00 48:00 72:00 96:00 X Temp(C) 15.0 15.0 14.0 Temp(C) 15.0 15.0 14.0 0	ELAPSED TIME			8.0				8.4 9.4 555
trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00:00 24:00 48:00 72:00	**	Temp(C)	15.0	15.0	15.0	14.0	14.5
Throl 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	00000		7.9 8.6 556 15.0	15.0	15.0	14.0	8.4 9.2 554 14.5
LC50 : >100% limits : 0.0 - 0.0 : LC50 >100	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			7.9 8.4 554 15.0	15.0	15.0	14.0	8.4 9.2 554 14.5
. limits : 0.0 - 0.0 s : LC50 >100	: 0501							
···	0.0 - 0.0 :							
	** \$/)							

3	TOXICITY TEST REPORT Sample: 03900088	Stelco Steel Hilton Works Hamilton, ONT (950006)	North Outfall, (400)	BAR Grab P. Peidl 02/06/90 02/06/90 02/07/90 at: 1200	STATIC (Protocol to determine the acute lethality of liquid effluents to fish, OME, 1983).	Rainbow trout	T I M E TOTAL MORTALITY	72:00 96:00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	T0X						S	24:00 48:0	

TOXICITY TEST PARAMETERS

		00:00 54:00 48:00 72:00 86:00
		72:00
	LLI	9
	30	-
	_	87
	-	00:
	0	24
	ш	0
80	S	0:
8	٥.	00
00	ELAPSED	
33	_	
0	123	
Sample Number: 03900088		
Sample	TEST	

8.0 8.9 698 14.0	8.0 8.9 698 14.0	8.6 9.5 532 14.0	8.5 9.5 535 14.0
15.0	15.0	15.0	15.0
15.0 15.0 15.0	15.0 15.0	15.0 15.0 15.0	15.0 15.0 15.0
15.0	15.0	15.0	15.0
8.7 9.9 693 15.0	8.7 9.9 693 15.0	7.8 8.3 539 15.0	7.8 8.3 539 15.0
pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)
100	100	Control	Control

TOXICITY T	TEST REPORT Sample: 03900175
TEST CONDITIONS	
Company : Stelco Steel	Stelco Steel Hilton Works Hamilton, ONT
Region : West Central Industry : Iron and Steel	ral Steel
Control point : North Outfall,	fall, (400)
Laboratory BAR Sampling Method Grab Sampled By P. Peidl Date Collected 03/06/90 Received 03/06/90 Tested 03/07/90	at: 1345
Type of Bioassay : STATIC (Protocol	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal : Rainbow trout Weight(gm) : Length(mm) :	rout
MORTALITY DATA	
TEST ELAPSED TIL	M E TOTAL MORTALITY
x 00:00 24:00 48:00 72:0	72:00 96:00 %
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000
96 Hour LC50 : Non-lethal	lal
95% fid. limits : 0.0 -	₩ 0.0
Comments : Single co	Single concentration test; Non lethal

TOXICITY TEST PARAMETERS

8.3 8.5 538 14.5 8.1 738 14.5 14.5 14.5 00:00 24:00 48:00 72:00 96:00 14.5 14.0 14.0 14.5 14.0 14.0 14.5 14.0 14.0 14.5 14.0 ELAPSED TIME 14.0 Sample Number: 03900175 pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) Control Control TEST CONC. 100 100

Company Region Industry	: Stelco Steel Hilton Hamilton, ONT (950006) : West Central : Iron and Steel	o Steel Hilton Works ton, ONT 06) Central and Steel		Sample TEST CONC.	Number: 01900058 E L A P S	E D	T 1 M E	55:00
Laboratory Sampling Method Sampled By Date Collected	MOE Grab Mark 03/28			100	pH 02 ppm Cond. Temp(C)	8.1 10.6 530 15.0	8.1 10.3 530 15.0	8.1 10.1 540 15.0
Received Tested		1200		99	pH 02 ppm Cond. Temp(C)		8.0 10.4 445 15.0	8.1 9.9 445 15.0
Test Animal	• • •	etermine the uents to fish	(Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Rainbow trout	70	pH 02 ppm cond. Temp(C)		8.8 10.4 380 15.0	8.1 9.8 375 15.0
Length(mm) MORTALITY DATA	• ••			30	pH 02 ppm cond. Temp(C)		7.9 10.3 350 15.0	8.0 9.9 350 15.0
TEST E L A CONC.	P S E D	T I M E M 25:00 46:00 71:00 96:00	TOTAL MORTALITY %	20	pH 02 ppm cond. Temp(C)		7.8 10.3 320 15.0	7.9 9.8 320 15.0
100 65 40 30 00 00 00	0 10 10 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0	01 01 01 00 00 00 00	001 80 000 007	10	pH 02 ppm Cond. Temp(C)		7.9 10.4 280 15.0	8.0 300 15.0
ntrol	000	NN	30	Control	pH O2 ppm Cond. Temp(C)		7.4 10.4 270 15.0	7.9 9.9 265 15.0
96 Hour LC50	0.0 - 0.0 :		×					
95% fid. limits	× 0.0 - 0.0 :		-					

7.6 440 15.0 15.0 8.0 9.9 9.9 15.0 15.0 15.0

> 8.8 9.9 375 15.0

10.0 375 15.0 8.0 345 15.0

7.9 9.9 345 15.0 7.9 10.0 320 15.0

7.9 9.7 315 15.0

7.8 8.8 445 15.0

8.0 9.9 435 15.0

00:40:00 71:00 96:00

8.0 8.5 7.7 7.7 7.7 7.7 7.7 7.7

> 8.0 10.0 300 15.0

> 7.9 9.9 295 15.0

8.0 10.0 265 15.0

7.9 9.8 260 15.0

ж

14.5

14.0

14.5

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

00:00 24:00 48:00 72:00 96:00 8.1 9.7 727 14.0 8.0 9.5 730 14.0 8.4 9.6 539 14.0 14.5 14.5 14.5 14.0 14.0 ELAPSED TIME 14.0 14.5 14.5 14.5 8.5 732 15.0 7.9 9.1 541 15.0 Sample Number: 03900264 pH OZ ppm Cond. Temp(C) Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Control Control TEST CONC. 100 100

MISA Trout

TEST CONDITIONS	
Сомрапу	: Stelco Steel Hilton Works Hamilton, ONI
Region Industry	(950006)* : West Central : Iron and Steel
Control point	: North Outfall, (400)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR Grab : D. Johnston : 05/01/90 : 05/02/90 at: 1130
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish, OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout
MORTALITY DATA	
TEST E L A P S CONC.	ED TIME TOTAL MORTALITY
x 00:00 24:00	24:00 48:00 72:00 96:00
100 100 Control 0 0 Control 0 0	
96 Hour LC50	: Non-lethal
95% fid. limits	× 0.0 - 0.0 :
Comments	: Non lethal; single concentration test

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900348

TOXICITY TEST REPORT

Sample Number: 03900348

00:96	8.1 9.3 767 15.0	8.1 9.2 773 15.0	8.3 9.1 560 15.0	8.3 9.2 538 15.0
P S E D T I M E 00:00 24:00 48:00 72:00 96:00	14.5	14.5	15.0 14.5	14.5
T I M E	15.0 15.0 14.5	15.0	15.0	15.0 15.0 14.5
D T	15.0	15.0	15.0	15.0
E L A P S E D 00:00 24	8.3 10.0 760 15.5	8.3 10.0 760 15.5	7.9 9.7 551 15.5	7.9 9.7 551 15.5
ш	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)
CONC.	100	100	Control	Control

Stelco Steel Hilton Works Stelco Steel Hilton Works 1950006;	отрапу											
ithod : BAR : 1330 1.5 Peidl : 60,05/90 1.5 Peidl : 60,05/90 1.5 Peidl : 60,06/90 1	egion ndustry	** ** **	Stelc Hamil (9500 West Iron	St. Son, Sent	eel ON ral Stee	± -	ton	Works				
## it is BAR	ontrol point	**		Out	fall		(400)					
E L A P S E D T I M E 1:00 24:00 48:00 72:00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ambing Method ampled By ate Collected Received Tested	** ** ** ** **		19006 1906 1906	a to		330					
Rainbow trout Rainbow trout	of	••	STA (Pr	cot		flue	termi ents		e acute sh. OME	let	thalit 1983).	>
E L A P S E D T I M E HORTALITY 00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0	est Animal eight(gm) ength(mm)	** ** **		#	rou							
00:00 24:00 48:00 72:00 96:00	ORTALITY DATA											
00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	E L A	S	٥	₩					TOT	AL ITY	_	
	00:00			72:0		5:00	_					24
	0000	2000	0000	0000		0000						0000
	95% fid. limits	**	0.0	'		0.0	34					
limits : 0.0 - 0.0	Comments	••	Single	00	conc.	test	0.0	non lethal	thal			

TOXICITY TEST PARAMETERS

	00:96	7.9 8.0 726 15.5	8.8 729 15.5	8.2 8.2 536 15.5	8.2 8.4 539 15.5
	72:00	16.0	16.0	16.0	16.0
	T I M E	15.0 16.0	15.0	15.0	15.0
	T 1 1	15.5	15.5	15.5	15.5
1900441	ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.0 9.3 733 15.0	8.0 9.3 733 15.0	7.8 8.3 545 15.0	7.8 8.3 545 15.0
Sample Number: 03900441	A J	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
Sample	TEST CONC.	100	100	Control	Control

TEST CONDITIONS		
Сопрапу	: Stelco Steel Hilton Works Hamilton, ONT	Sample Number: USYUU552 TEST E L A P S E
Region Industry	: West Central : Iron and Steet	00:00
Control point	: North Outfall, (400)	11-0
Laboratory Sampling Method Sampled By	: BAR : Grab : P. Peidl • 07/03/90	100 pf 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.
Received	: 07/03/90 : 07/04/90 at: 1210	100 pH 8.0 02 ppm 9.8 Cond. 697
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	Temp(C) 15.5 Control pH 7.8
Test Animal	: Rainbow trout	G
Length (mm) MORTALITY DATA	•	Control pH 7.8 02 ppm 9.7 Cond, 540 Temp(C) 15.5
CONC.	SED TIME TOTAL MORTALITY	
x 00:00 24:00	00:00 24:00 48:00 72:00 96:00	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
96 Hour LC50	: Non-lethal	
95% fid. limits	× 0.0 - 0.0 :	
Comments	: Single Concentration Test; Non Lethal	

TOXICITY TEST PARAMETERS

Sample: 03900552

TOXICITY TEST REPORT

00:96	8.1 8.9 681 15.5	7.7 7.9 684 15.5	8.3 9.0 528 15.5	8.5 9.1 526 15.5
72:00	16.0	16.0	16.0	16.0
T I M E:00 48:00	15.5	15.5	15.5	15.0 15.5 16.0
T 1	15.0	15.0	15.0	15.0
ELAPSED TIME 00:00 24:00 48:00 72:00 96:00	8.0 9.8 697 15.5	8.0 9.8 697 15.5	7.8 9.7 540 15.5	7.8 9.7 540 15.5
EL	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

Control Part Control Part P	TEST CONDITIONS					0.00	0,000
100 pH 1	Company Region Industry		Hilton Works		Sample TEST CONC.	Number: USS	A P S E 00:00
ed : 08/14/90 3 : 08/14/90 3 : 08/15/90 at: 1225 3 : 0.0 - 0.0	Control point Laboratory Sampling Method Sampled By		(400)		100	pH 02 ppm Cond. Temp(C)	8.2 9.2 598 16.0
Stay STATUC Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Control pH Condition of Liquid effluents to fish. OME, 1983). Condition of Liquid effluents to fish. OME Condition of Liquid effluents to fis	Date Collected Received Tested	: 08/14/90 : 08/14/90 : 08/15/90 at:	1225		100	pH 02 ppm cond. Temp(C)	8.2 9.2 598 16.0
: Rainbow trout : Control pH	Type of Bioassay		determine the luents to fish	acute lethality 1. OME, 1983).	Contro	1 pH 02 ppm Cond	7.8
F L A P S E D T I M E	Test Animal Weight(gm) Length(mm)				Contro		16.0 7.8 8.1 8.1
E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00	MORTALITY DATA					Temp(C)	16.0
00:00 24:00 48:00 72:00 96:00	E L A	SED		TOTAL MORTALITY			
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		00 48:00 72:00 96:	00:	26			
00 80 00	rot 0	0000		0000			
40 00	96 Hour LC50						
0.0	95% fid. limits		× 0.				
	Comments	: Single Concent	tration Test;	non-lethal			

8.2 9.5 15.5

16.0 16.0

15.5

8.2 9.2 598 16.0

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

8.1 9.4 609 15.5

8.2 9.2 598 16.0

15.5 16.0 16.0

8.4 9.3 535 15.5

15.5 16.0 16.0

7.8 8.1 533 16.0

8.4 9.4 535 15.5

15.5 16.0 16.0

000000 34 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY : Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel : East Side Filter, (601) at: 1200 36 00:00 24:00 48:00 72:00 96:00 0.0 00000 Rainbow trout ELAPSED TIME : Non-lethal : Non-lethal BAR Grab P. Peidl 12/05/89 12/05/89 000000 0.0 00000 600000 Laboratory Sampling Method Sampled By Date Collected Received 95% fid. limits Type of Bioassay TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 000000 Test Animal Weight(gm) Length(mm) Comments Region Industry 100 65 40 20 10 Control Company TEST CONC.

TOXICITY TEST PARAMETERS

Sample: 03890319

TOXICITY TEST REPORT

Sample Number: 03890319

00:96	7.8 8.9 618 14.5	8.3 9.7 594 14.5	8.3 9.6 580 14.5	8.4 9.7 565 14.5	8.4 9.6 563 14.5	8.4 9.7 560 14.5
1 M E 48:00 72:00 96:00	14.5	14.5	14.5	14.5	14.5	14.5
1 M E	14.5	14.5	14.5	14.5	14.5	14.5
	14.5	14.5	14.5	14.5	14.5	14.5
LAPSED T 00:00 24:00	7.7 8.8 610 15.5	7.7 8.9 596 15.5	7.7 8.9 582 15.5	7.7 8.8 576 15.5	7.7 8.8 571 15.5	7.6 8.9 569 15.5
ш	pH 02 ppm cord. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	of ppm 02 ppm cond. Temp(C)
TEST CONC.	100	9	07	20	10	Control

TOXICITY TEST PARAMETERS

Sample: 03900028

TOXICITY TEST REPORT

00:96	8.1 9.4 671 14.0	8.2 9.3 626 14.0	8.4 9.2 608 14.0	8.4 9.3 586 14.0	8.5 9.1 568 14.0	8.5 9.0 559 14.0	8.5 9.3 558 14.0
D TIME 24:00 48:00 72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
M E	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Z4:00 /	15.0	15.0	15.0	15.0	15.0	15.0	15.0
00:00	7.6 9.6 660 15.0	7.8 9.5 620 15.0	7.9 9.4 593 15.5	7.9 9.3 570 15.5	7.9 9.3 563 16.0	7.9 9.2 556 16.0	7.9 9.2 551 16.0
ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	of pH O2 ppm Cond. Temp(C)
TEST CONC.	100	99	07	20	10	ľ	Control

MISA Trout

TEST CONDITIONS	
Company	: Steico Steel Hilton Works Hamilton, ONT (OS/OODS)
Region Industry	: West Central : Iron and Steel
Control point	: East Side Filter, (601)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab P. Peidl 02/06/90 02/06/90 02/07/90 at: 1200
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout
MORTALITY DATA	
TEST ELAPS CONC.	E D T I M E MORTALITY
x 00:00 24:00	24:00 48:00 72:00 96:00
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000
96 Hour LC50	: Non-lethal
95% fid. limits	× 0.0 - 0.0 :
Comments	: Single Concentration Test

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900086

TOXICITY TEST REPORT

		00:96	8.0 8.8 736	7.9 8.4 736 14.0	8.4 9.3 537 14.0	8.4 9.2 536 14.0
		48:00 72:00 96:00	15.0	15.0	15.0	15.0
	TIME	48:00	15.0	15.0	15.0	15.0 15.0 15.0
		24:00	15.0	15.0	15.0	15.0
980006	LAPSED	00:00	7.7 7.4 7.4 734 15.0	7.7 7.4 734 15.0	7.8 8.3 536 15.0	7.8 8.3 536 15.0
Sample Number: 03900086	EL		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	L pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST	2	100	100	Control	Control

TEST CONDITIONS				
Company		ton, ON	Stelco Steel Hilton Works Hamilton, ONT (950006)	
Industry	: Iron and Steel	od St	eel	
Control point	: East Si	de F	Side Filter, (601)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 02/06/90 : 02/06/90		at: 1200	
Type of Bioassay	: STATIC (Protocof liqu	ool to	STATIC (Protocol to determine the acut of liquid effluents to fish. C	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout	tro	rt.	
MORTALITY DATA				
CONC.	SED T	I	F MOR1	TOTAL MORTALITY
00:00 24:00	48:00	72:00	00:96	ж
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000	0000	0000
96 Hour LC50	: Non-lethal	ethal		
95% fid. limits	0.0		2 0.0	
Compone	o Cinalo	200	Concentration Test	

TOXICITY TEST PARAMETERS

		00:96	8.1 9.2 738 14.0	8.1 738 14.0	8.4 8.9 541 14.0	8.3 8.9 539 14.0
		72:00	15.0	15.0	15.0	15.0
	TIME	8:00	15.0	15.0	15.0	15.0 15.0 15.0
00085		7 00:5	15.0	15.0	15.0	15.0
	ELAPSED	00:00 24:00 48:00 72:00 96:00	7.8 8.1 734 15.0	7.8 8.1 734 15.0	7.8 8.3 535 15.0	7.8 8.3 535 15.0
Sample Number: 03900085	EL		pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
Sample	TEST	*	100	100	Control	Control

00000 34 Sample: 03890268 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish, OME, 1983). TOTAL MORTALITY : Stelco Steel Hilton Works Hamilton, ONT (950006) : #1 60 inch Sewer, (602) 00:00 04:00 24:00 48:00 72:00 96:00 000000 at: 1000 36 TOXICITY TEST REPORT 0.0 : West Central : Iron and Steel 000000 Rainbow trout ELAPSED TIME : Non-lethal : Non lethal BAR Grab P. Peidl 11/14/89 11/14/89 000000 0.0 000000 000000 Laboratory Sampling Method Sampled By Date Collected Received Tested 95% fid. limits Type of Bioassay TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 000000 Test Animal Weight(gm) Length(mm) Comments Region Industry Control 10 20 40 65 100 Company TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03890268

00:96	8.5 9.3 561 15.0	8.4 9.2 565 15.0	8.4 9.3 570 15.0	8.3 9.2 586 15.0	8.2 9.3 597 15.0	7.4 8.5 620 15.0
72:00	14.0	14.0	14.0	14.0	14.0	14.0
1 M E 24:00 48:00 72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0
1 M E 24:00	15.0	15.0	15.0	15.0	15.0	15.0
D T 00:50	14.5	14.5	14.5	14.5	14.5	14.5
00:00 (7.8 8.8 561 15.5	7.8 9.0 566 15.5	7.8 9.0 574 15.5	7.7 9.1 583 15.5	7.5 592 5.51	6.8 9.3 611 15.5
ш	pH 02 ppm cond. Temp(C)					
CONC.	Control	10	20	07	92	100

SLOPE of Mortality Curve : LC50 Calculated By : Geometric Mean

	00:90	4.0 9.7 714 14.5	7.9 9.3 645 14.5	8.2 9.4 14.5	8.2 9.2 590 14.5	8.3 9.3 576 14.5	8.2 8.7 567 14.5
	72:00 8	14.5	14.5	14.5	14.5	14.5	14.5
I M E	8:00	4.0 10.0 731 14.5	14.5	14.5	14.5	14.5	14.5
-	7 00 2 7 7	15.0	15.0	15.0	15.0	15.0	15.0
LAPSED	00:00 24:00 48:00 72:00 96:00	3.9 9.7 732 15.0	6.8 9.3 644 15.0	7.2 9.1 615 15.0	7.5 8.7 594 15.0	7.6 8.7 585 15.0	7.7 8.8 568 15.0
E		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	02 ppm Cond. Temp(C)
TEST	CONC.	100	59	07	20	10	Control

TEST CONDITIONS				1
Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	Sample TEST CONC.	Sample Number: US900067 TEST E L A P S CONC. 00:(P S E 00:00
Control point Laboratory Sampling Method Sampled By	: #1 60 inch Sewer, (602) : BAR : Grab : Grab : P. P. P. Cold	100	pH 02 ppm cond. Temp(C)	6.0 9.8 726 15.0
Date Lot recred Received Tested		65	pH O2 ppm Cond. Temp(C)	7.0 9.3 654 15.0
Type of Bloassay	<pre>: SIAILC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Rainbow trout</pre>	07	pH O2 ppm Cond.	7.4 8.7 610 15.0
Weight(gm) Length(mm) MORIALITY DATA		20	pH 02 ppm cond. Temp(C)	7.6 8.4 576 15.0
CONC. E L A P	APSED TIME TOTAL MORTALITY 24:00 48:00 72:00 96:00	10	pH 02 ppm cond. Temp(C)	7.8 8.2 556 15.0
100 65 65 70 20 20 20 20	0000	5	pH 02 ppm Cond. Temp(C)	7.8 8.5 550 15.0
o o o o o o	-00	Control	DH 02 ppm Cond. Temp(C)	7.8 8.5 543 15.0
96 Hour LC50 95% fid. Limits	: >100% : 0.0 - 0.0 %			
Comments	100			

8.3 10.2 604 15.0

14.5

14.5

14.5

7.4 8.7 610 15.0

8.4 10.2 566 15.0

14.5

14.5

14.5

7.6 8.4 576 15.0

8.5 10.2 547 15.0

14.5

14.5

14.5

7.5 9.9 717 15.0

14.5 14.5 14.5

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

8.0 9.9 651 15.0

14.5

14.5

14.5

7.0 9.3 654 15.0

8.5 10.2 531 15.0

14.5

14.5

14.5

8.4 10.0 541 15.0

14.5

14.5

14.5

SLOPE of Mortality Curve : 4.6 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

34		00:00	01:00	02:00 04:00 24:00 48:00 72:00 96:00	00:50	7 00:57	8:00 2	72:00 9	00:90
100	pH O2 ppm Cond. Temp(C)	3.1 9.7 1214 15.0	15.0	3.1 9.7 1214 15.0					
92	pH 02 ppm cond. Temp(C)	6.4 9.3 732 15.0	15.0	15.0	15.0	15.0	7.3 8.4 732 15.0	15.0	14.0
07	pH 02 ppm cond. Temp(C)	7.0 9.1 656 15.0	15.0	15.0	15.0	15.0	15.0	15.0	8.0 9.3 648 14.0
50	pH 02 ppm Cond. Temp(C)	7.3 8.9 589 15.0	15.0	15.0	15.0	15.0	15.0	15.0	8.2 9.5 590 14.0
10	pH 02 ppm Cond. Temp(C)	7.6 8.8 567 15.0	15.0	15.0	15.0	15.0	15.0	15.0	8.2 9.1 566 14.0
S	pH 02 ppm cond. Temp(C)	7.7 8.8 551 15.0	15.0	15.0	15.0	15.0	15.0	15.0	8.8 8.8 550 14.0
Control	t pH 02 ppm Cond. Temp(C)	7.9 8.7 533 15.0	15.0	15.0	15.0	15.0	15.0	15.0	8.4 9.1 534 14.0

000000 Sample: 03900176 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL 00:00 01:00 02:00 04:00 24:00 48:00 72:00 96:00 -00000 00000 Stelco Steel Hilton Works Hamilton, ONT (950006) #1 60 inch Sewer, (602) BAR Grab P.Peidl 03/06/90 03/06/90 at: 1240 0-00000 × TOXICITY TEST REPORT 91.4 : Rainbow trout : West Central : Iron and Steel TIME 000000 ж 61.4 : Lethal : 75.0 ELAPSED 000000 000000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 0000000 Test Animal Weight(gm) Length(mm) Region Industry Comments Control Company TEST CONC. 2002 ×

SLOPE of Mortality Curve : 8.1 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample Number: 03900176

00:96		7.7 8.8 747 15.0	8.1 9.0 679 15.0	8.2 9.0 613 15.0	8.3 9.1 574 15.0	8.3 9.1 554 15.0	8.5 9.3 533 15.0
D TIME 01:00 02:00 04:00 24:00 48:00 72:00 96:00		15.0	15.0	15.0	15.0	15.0	15.0
48:00		14.0	14.0	14.0	14.0	14.0	14.0
24:00		14.0	14.0	14.0	14.0	14.0	14.5 14.0 14.0
00:00	2.8 1425 14.5 14.5	14.5	14.5	14.5	14.5	14.5	14.5
1 M E 02:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
D T 001:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
LAPSE 1	2.8 10.2 1425 15.0	6.0 10.1 733 15.0	6.9 9.9 661 15.0	7.2 9.7 603 15.0	7.4 9.5 571 15.0	7.6 9.4 558 15.0	8.2 9.4 538 15.0
E	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	99	07	50	01	5	Control

TOXICITY TEST PARAMETERS

Sample: 01900050

TOXICITY TEST REPORT

11:00 02:00 04:00 29:00 50:00 70:30 96:0

TEST CONDITIONS				1	
Company	: Stelco Steel Hilton Works Hamilton, ONT	Sample	Number	U1900050 ELAPSED	- -
Region Industry	(yound): West Central: Iron and Steel	CONC		00:00 00:30 01	30 01
Control point	: #1 60 inch Sewer, (602)		:		
Laboratory Sampling Method Sampled By	: MOE : Grab : B. Trach : 03/26/00	001	pH 02 ppm Cond. Temp(C)	12.4 490 15.0	-
Received	: 03/28/90 at: 1200	92	pH 02 ppm cond. Temp(C)		
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm		
Test Animal	: Rainbow trout		Temp(C)		
Length(mm)	•	30	pH 02 ppm		_
MORTALITY DATA			Cond. Temp(C)		
TEST E L A P :	SED TIME TOTAL MORTALITY	20	pH 02 ppm		-
× 00:00 00:30	00:00 00:30 01:00 02:00 04:00 29:00 50:00 70:30 96:00 %		Cond. Temp(C)		
100 65 40 30 20 00 00 00 00 00		10	pH 02 ppm Cond. Temp(C)		-
trol 0		Control	U pH 02 ppm Cond. Temp(C)		-
96 Hour LC50	: Non-lethal				
95% fid. limits	% 0.0 - 0.0 :				
Comments	: MISA Audit				

5.50

> 7.8 9.9 355 15.0

7.7 10.3 355 15.0

7.7 9.8 355 15.0

7.7 10.0 355 15.0 7.9 9.9 325 15.0

7.8 10.4 325 15.0

7.8 9.8 325 15.0

7.8 10.0 325 15.0 7.7 10.2 300 15.0

7.7 9.6 300 15.0

7.7 9.8 305 15.0

7.8 10.5 260 15.0

7.8 10.0 265 15.0

7.8 9.9 275 15.0

7.9 10.0 385 15.0

7.8 10.4 380 15.0

7.8 10.0 390 15.0

7.6 9.9 385 15.0

7.7 10.4 455 15.0

7.7 10.0 460 15.0

7.6 10.0 455 15.0

7.5 9.4 540 15.0

TEST CONDITIONS			
Сопрапу	Stelco Steel Hilton Works Hamilton, ONI	Iton Works	
Region Industry	: West Central : Iron and Steel		
Control point	: #1 60 inch Sewer,	r, (602)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidt : 04/03/90 : 04/03/90	0771	
Type of Bioassay	: STATIC (Protocol to determine of liquid effluents to	termine the acute lethality ents to fish. OME, 1983).	>
Test Animal Weight(gm) Length(mm)	: Rainbow trout	٠	
MORTALITY DATA			
TEST E L A P	SED TIME	TOTAL MORTALITY	
x 00:00 24:00	00 48:00 72:00 96:00		*
100 0 1 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	*000000		2000000
96 Hour LC50	: >100%		
95% fid. limits	0.0 - 0.0 :	*	
Compone	. 1550 >100		

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

		00:96	7.7 9.3 815 14.0	7.9 8.8 715 14.0	7.9 8.2 652 14.0	8.2 9.4 594 14.0	8.4 9.5 562 14.0	8.4 9.5 547 14.0	8.4 9.2 536 14.0
		72:00 96:00	14.5	5.0	14.5	14.5	14.5	14.5	14.5
	I M E	48:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0
	_	24:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
8900568	LAPSE	00:00	6.6 9.9 820 15.0	7.1 9.4 718 15.0	7.3 9.3 648 15.0	7.6 9.3 597 15.0	7.8 9.3 569 15.0	7.8 9.3 556 15.0	7.9 9.2 536 15.0
Sample Number: 03900268	E		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)
Sample	TEST	*	100	65	07	20	10	ľ	Control

TOXICITY TEST PARAMETERS

Sample Number: 03900344

7.7 9.5 822 15.0 8.2 9.5 726 15.0 8.3 9.2 663 15.0 8.3 9.2 606 15.0 8.3 9.4 576 15.0 8.4 9.4 564 15.0 8.4 9.5 530 15.0 00:00 24:00 48:00 72:00 96:00 14.5 14.5 14.5 14.5 14.5 14.5 14.5 15.0 15.0 15.0 15.0 15.0 15.0 15.0 ELAPSED TIME 15.0 15.0 15.0 15.0 15.0 15.0 15.0 6.5 9.8 820 15.5 7.1 9.8 728 15.5 7.3 9.8 658 15.5 9.7 9.7 605 15.5 7.8 9.7 576 15.5 7.9 9.7 563 15.5 DH O2 ppm Cond. Temp(C) Temp(C) pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm cond. Temp(C) pH O2 ppm Cond. Temp(C) (D)dwa] pH 02 ppm Cond. pH 02 ppm Cond. Control TEST CONC. 40 20 10 100 65

000000 Sample: 03900442 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY Stelco Steel Hilton Works Hamilton, ONI (950006) : #1 60 inch Sewer, (602) TOXICITY TEST REPORT at: 1210 00:00 24:00 48:00 72:00 96:00 0.0 : West Central : Iron and Steel : Rainbow trout 0000000 ELAPSED TIME Non-lethal BAR Grab P. Peidl 06/05/90 06/05/90 : Non lethal 000000 0.0 000000 000000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 0000000 Test Animal Weight(gm) Length(mm) Region Comments 100 65 40 20 10 5 Control Company TEST CONC. ×

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900442

	-01-7	0100	****			0.0015	*** ==
96:00	8.1 9.0 727 16.0	8.2 8.9 659 16.0	8.3 9.0 608 16.0	8.4 8.9 573 16.0	8.3 8.5 555 16.0	8.4 8.6 542 16.0	8.3 8.7 530 16.0
72:00 96:00	16.0	16.0	16.0	16.0	16.0	16.0	16.0
1 M E	15.5	15.5	15.5	15.5	15.5	15.5	15.5
D T 24:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
L A P S E 00:00	8.0 9.3 725 15.0	7.9 9.1 665 15.0	7.9 8.8 622 15.0	7.8 8.6 582 15.0	7.8 8.6 560 15.0	7.8 8.6 551 15.0	7.8 8.6 545 15.0
ш	pH 02 ppm cond. Temp(C)	t pH 02 ppm cond. Temp(C)					
TEST CONC.	100	99	07	20	10	10	Control

TOXICITY TEST PARAMETERS

Sample: 03900551

TOXICITY TEST REPORT

399

TEST CONDITIONS	
Company	: Stelco Steel Hilton Works Hamilton, ONT (950006)
Region Industry	: West Central : Iron and Steel
Control point	: #1 60 inch Sewer, (602)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : T. Hibberd : 08/14/90 : 08/15/90 at: 1335
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout
MORTALITY DATA	
TEST E L A P :	SED TIME TOTAL MORTALITY
x 00:00 24:0	24:00 48:00 72:00 96:00 %
100 0 0 100 0 0 Control 0 0	0000
96 Hour LC50	: Non-lethal
95% fid. limits	: 0.0 - 0.0 ×
Commente	: Single Concentration Test: non-lethal

TOXICITY TEST PARAMETERS

Sample: 03900683

TOXICITY TEST REPORT

Sample Number: 03900683

00:96	8.1 9.3 625 15.5	8.0 9.1 623 15.5	8.3 9.1 537 15.5	8.3 9.0 540 15.5
72:00	15.5	15.5	15.5	15.0 15.5
T I M E 0 48:00	15.0	15.0	15.0	
0:5	15.5	15.5	15.5	15.5
00:00 Z	8.4 8.4 614 16.0	8.1 8.4 614 16.0	7.9 8.4 535 16.0	7.9 8.4 535 16.0
ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	L pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 03890266

TOXICITY TEST REPORT

Sample Number: 03890266

	00:96	8.6 9.5 555 14.0	8.4 9.2 547 14.0	8.5 9.2 523 14.0	8.4 9.4 486 14.0	8.2 9.3 435 14.0	8.1 9.3 365 14.0
	72:00	14.0	14.0	14.0	14.0	14.0	14.0
	8:00	14.0	14.0	14.0	14.0	14.0	14.0
I M E	7 00:57	15.0	15.0	15.0	15.0	15.0	15.0
-	7:00 5	15.0	15.0	15.0	15.0	15.0	15.0
LAPSED	00:00 04:00 24:00 48:00 72:00 96:00	7.6 7.0 563 15.0	7.6 7.1 544 15.0	7.6 7.1 523 15.0	7.7 7.4 485 15.0	7.7 7.9 434 15.0	8.0 9.4 363 15.0
E		pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST	, % , %	Control	10	50	07	99	100

TEST CONDITIONS		
Company	Stelco Steel Hilton Works	Sample Nu
		TEST
Region Industry	: West Central : Iron and Steel	**
Control point	: #2 Rod Mill, (1100)	000
Laboratory Sampling Method Sampled By	: Grab	000
	: 12/05/89 : 12/06/89 at: 1200	99
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	40 00
Test Animal	: Rainbow trout	
DATA	• ••	20 00 00 00 00 00 00 00 00 00 00 00 00 0
CONC.	ED TIME TOTAL HORTALITY	10
x 00:00 24:00	48:00 72:00 96:00 x	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	Control
96 Hour LC50	: Non-lethal	
95% fid. limits	× 0.0 - 0.0 :	
Comments	: Non-lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03890321

TOXICITY TEST REPORT

	0	~~ \ \ \ \	-225	2225	20-12	NBNW	моми
	0:96	8.1 9.1 355 14.5	8.1 9.2 432 14.5	8.2 9.2 482 14.5	8.2 8.9 521 14.5	8.3 9.2 538 14.5	8.3 8.9 553 14.5
	72:00	14.5	14.5	14.5	14.5	14.5	14.5
	I M E 48:00 72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0
	D T	14.5	14.5	14.5	14.5	14.5	14.5
3890321	L A P S E	7.8 9.8 349 15.0	7.7 9.3 428 15.0	7.7 9.1 482 15.0	7.7 8.7 544 15.0	7.7 8.9 527 15.0	7.8 8.9 568 15.0
Sample Number: 03890321	ш	pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)				
Sample	CONC.	100	99	07	20	10	Control

TOXICITY TEST PARAMETERS

	00:96	8.3 9.4 362 14.0	8.4 9.3 431 14.0	8.4 9.2 483 14.0	8.4 9.3 517 14.0	8.4 9.4 531 14.0	8.5 9.3 542 14.0	8.5 9.1 544 14.0
	72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
M	48:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0
1	54:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0
LAPSE	00:00	7.9 11.2 355 14.0	8.0 10.4 424 14.5	8.0 10.2 479 15.0	8.0 9.7 516 15.5	8.0 9.3 539 16.0	8.0 9.4 544 16.0	8.0 9.2 547 16.0
ш		pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)					
TEST	, % %	100	59	07	20	10	50	Control

MISA Trout

COLO LI TOMA		
Company	: Stelco Steel Hilton Works Hamilton, ONT (950006)	
Region . Industry	: West Central : Iron and Steel	
Control point	: #2 Rod Mill, (1100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 02/06/90 : 02/06/90 : 02/07/90 at: 1200	
Type of Bioassay	: STATIC (Protocol to determine the ac of liquid effluents to fish.	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	
MORTALITY DATA		
TEST E L A P	SED TIME MC	TOTAL MORTALITY
x 00:00 24:0	24:00 48:00 72:00 96:00	ж
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000
96 Hour LC50	: Non-lethal	
95% fid. limits	: 0.0 - 0.0 x	
Comments	Single Concentration Test	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900089

TOXICITY TEST REPORT

		00:96	8.2 9.6 357 14.0	8.0 9.2 356 14.0	8.6 9.8 530 14.0	8.5 9.6 535 14.0
		00:00 24:00 48:00 72:00 96:00	15.0	15.0	15.0	15.0
	1 M E	48:00	15.0	15.0	15.0	15.0 15.0 15.0
	D T	24:00	15.0	15.0	15.0	15.0
3900089	LAPSE	00:00	8.0 10.0 348 15.0	8.0 10.0 348 15.0	7.8 8.3 536 15.0	7.8 8.3 536 15.0
Sample Number: 03900089	ш		pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST	×	100	100	Control	Control

TEST CONC.

		00:96	8.0 373 15.0	8.1 9.2 370 15.0	8.5 9.1 530 15.0	8.2 8.2 534 15.0
		72:00	15.0	15.0	15.0	15.0
	TIME	8:00	14.0 14.0 15.0	14.0 14.0	14.0	14.0 14.0 15.0
		7 00:57	14.0	14.0	14.0	14.0
3900179	ELAPSED	00:00 24:00 48:00 72:00 96:00	8.1 11.4 346 15.0	8.1 11.4 346 15.0	7.8 9.5 547 15.0	7.8 9.5 547 15.0
Sample Number: 03900179	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
Sample	TEST		100	100	Control	Control

00:00 00:30 01:00 02:00 04:00 23:30 45:30 70:00 96:0

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 01900055

TOXICITY TEST REPORT

	Sample	Sample Number: 01900055	000055
Company : Stelco Steel Hilton Works Hamilton, ONT (950006) Region : West Central	TEST CONC.	EL	E L A P S E
	100	pH 02 ppm Cond. Temp(C)	7.5 11.0 245 15.0
** ** **	9	pH O2 ppm Cond. Temp(C)	
Type of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm cond.	
ATA ATA	30	pH O2 ppm Cond. Temp(C)	
ELAPSED TIME MORTALITY 00:00 00:30 01:00 02:00 04:00 23:30 45:30 70:00 96:00 X	20	pH 02 ppm Cond. Temp(C)	
	10	pH O2 ppm Cond. Temp(C)	
	Control	t pH 02 ppm cond. Temp(C)	
96 Hour LC50 : Non-lethal 95% fid. limits : 0.0 - 0.0 %			
Comments : MISA Audit			

7.9 10.1 270 15.0

7.9 10.1 270 15.0

7.9 9.8 265 15.0

7.8 10.3 270 15.0

7.9 10.1 270 15.0

7.9 10.0 270 15.0

7.9 9.8 270 15.0

7.8 10.3 270 15.0

7.9 10.0 270 15.0

7.9 10.0 270 15.0

7.9 9.9 270 15.0

7.7 10.1 250 15.0

7.9 10.0 275 15.0

7.8 275 15.0

7.9 9.9 270 15.0

8.0 10.0 265 15.0

7.9 10.0 265 15.0

7.9 9.8 265 15.0

7.9 10.3 270 15.0

7.9 10.0 265 15.0

7.5 11.0 245 15.0

7.8 9.9 270 15.0

7.8 9.9 270 15.0

7.8 9.7 265 15.0

7.8 10.1 270 15.0

Control point

Region Industry

Company

Test Animal Weight(gm) Length(mm)

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	00:96	8.1 9.8 349 14.0	7.9 9.5 351 14.0	8.3 9.6 542 14.0	8.4 9.8 538 14.0
	72:00	14.5	14.5	14.5	14.5
	T I M E	14.5 14.0 14.5	14.0	14.0	14.5 14.0 14.5
	0:	14.5	14.5	14.5	14.5
3900269	E L A P S E D 00:00 24	8.1 10.6 354 15.0	8.1 10.6 354 15.0	7.9 9.0 544 15.0	7.9 9.0 544 15.0
Sample Number: 03900269	ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	100	Control	Control

96 Hour LC50

Comments

0000

100 100 Control

TEST CONC. ж

MISA Trout

TEST CONDITIONS		Z/200020
		Sample Number: USY00343
Har Har	Stelco Steel Hilton WORKS Stelco Steel Hilton WORKS (95000)	TEST ELAPSE
Region : We	West Central Iron and Steel	00:00
Control point : #2	#2 Rod Mill, (1100)	
Sampling Method : Grate Sampled By : D.	BAR Grab D. Johnston	02 pom 10.2 Cond. 374 Temp(C) 15.5
• •• ••	05/01/70 05/02/90 at: 1135	100 pH 8.2 02 ppm 10.2 Cond. 374
Type of Bioassay : ST/ (P)	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	G E
•• (Rainbow trout	Lond. 53 Temp(C) 15.
Length(mm) :		Control pH 7.9 02 ppm 9.7 Cond. 551 Temp(C) 15.5
TEST ELAPSED CONC.	D TIME TOTAL MORTALITY	
x 00:00 24:00 48:0	24:00 48:00 72:00 96:00	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
96 Hour LC50 : No	Non-lethal	
95% fid. limits : (0°0 - 0°0 ×	•
Comments : Nor	: Non lethal; single concentration test	

8.1 8.0 382 15.0

15.0 15.0 14.5

8.2 10.2 374 15.5

14.5

15.0

15.0

8.2 10.2 374 15.5

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900343

TOXICITY TEST REPORT

8.3 9.0 529 15.0

7.9 9.7 551 15.5

15.0 15.0 14.5

8.3 8.7 538 15.0

15.0 15.0 14.5

Company

TEST CONC. 3%

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

00:00 24:00 48:00 72:00 96:00 ELAPSED TIME Sample Number: 03900443

7.9 8.2 359 16.0	7.9 8.1 358 16.0	8.2 8.3 531 16.0	8.3 8.4 537 16.0
16.0	16.0	16.0	16.0
15.5	15.5 16.0	15.5	16.0 15.5
16.0	16.0	16.0	16.0
8.1 9.7 356 15.0	8.1 9.7 356 15.0	7.8 8.3 545 15.0	7.8 8.3 545 15.0
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
100	100	control	Control

MISA Trout

on itry itry itry on Bioassay itry bara E L A P S E L A	Stelco Steel Hilton Works Hamilton, ONI Hamilton		
### 15 Stelco Steel Hilton Works (\$50000 NT (\$5000 NT	### Stelco Steel Hilton Works Hamilton, ONT Hold Heath Hamilton Hami		
itry : West Central	itry : West Central : Fron and Steel : Iron and Steel : BAR : Grab :	Сопрапу	
of point : #2 Rod Mill, (1100) atory : BAR ing Method : Grab ed By : 07/03/90 collected : 07/03/90 Tested : 07/03/90 Tested : 07/04/90 at: 1200 of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout E L A P S E D T I M E	of point : #2 Rod Mill, (1100) atory : BAR Crab Region Industry		
ing Method : Grab Gra	ing Method : BAR ing Method : Grab	Control point	
of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout if t(gm) : Rainbow trout in the constraint of the constraint in the constrain	of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout : Single Concentration Test; Non Lethal : Single Concentration Test : Single	Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab P. Peidl 07/03/90 07/03/90
Animal : Rainbow trout t(gm) :	Animal : Rainbow trout t(gm) : Animal : Rainbow trout : Rainbow trout : TOTAL E L A P S E D T I M E HORTALITY 00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Type of Bioassay	STATIC (Protocol to determine of liquid effluents to
ELAPSED TIME HORTALITY 00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ELAPSED TIME HORTALITY X 00:00 24:00 48:00 72:00 96:00	Test Animal Weight(gm) Length(mm)	
ELAPSED TIME HORTALITY 00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	E L A P S E D T I M E HORTALITY 00:00 24:00 48:00 72:00 96:00 -ol 0 0 0 0 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0 0 0 0 -ol 0 0 0 0 0 0	MORTALITY DATA	
0 24:00 48:00 72:00 96:00	0 24:00 48:00 72:00 96:00	LAP	ED TIME .
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 Non-lethal its : 0.0 - 0.0 %	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 Non-lethal its : 0.0 - 0.0 %	00:00	72:00 96:00
** ** ** **	ν ν	0000	0000
limits :	Limits		
9.0	40	limits	0.0 - 0.0

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900550

TOXICITY TEST REPORT

		00:96	7.8 3.68 15.5	7.8 8.6 365 15.5	8.1 8.2 536 15.5	8.1 7.4 539 15.5
		00:00 24:00 48:00 72:00 96:00	16.0	16.0	16.0	16.0
	TIME	48:00	15.5	15.5	15.5	15.5
	D T	24:00	15.0	15.0	15.0	15.0
3900550	LAPSE	00:00	8.2 365 265 25.51	8.2 10.0 365 15.5	7.8 9.6 536 15.5	7.8 9.6 536 15.5
Sample Number: 03900550	ш		pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST	2 3€ 3€	100	100	Control	Control pH 02 p Conc

TOXICITY TEST PARAMETERS

8.4 9.8 565 14.0	8.4 9.2 566 14.0	8.4 9.7 569 14.0	8.4 9.6 587 14.0	8.4 9.5 598 14.0	8.1 9.5 601 14.0
14.0	14.0	14.0	14.0	14.0	14.0 14.0
14.0	14.0	14.0	14.0	14.0	14.0
15.0	15.0	15.0	15.0	15.0	15.0
15.0	15.0	15.0	15.0	15.0	15.0
7.6 7.5 558 15.0	7.5 7.5 563 15.0	7.7 7.7 569 15.0	7.6 7.9 578 15.0	7.7 8.8 596 15.0	7.7 9.3 615 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH OZ ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Control	10	20	07	99	100

TEST CONDITIONS			040	00300
Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	Sample TEST CONC.	Number: U38	90322 A P S E 00:00
Control point Laboratory Sampling Method Sampled By	: 20 inch Mill, (1200) : BAR : Grab : P. Peidl	100	pH 02 ppm cond.	5.50
Date Collected Received Tested	: 12/05/89 : 12/06/89 at: 1200	\$9	pH 02 ppm Cond.	7.7 9.2 9.2 561 15.0
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	07	pH 02 ppm	7.7
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	50	Temp(C) PH 02 ppm	7.7
MORTALITY DATA			Cond. Temp(C)	15.0
€	TOTAL MORTALITY	10	pH 02 ppm cond.	7.00
	00.02.00.00.00.00.00.00.00.00.00.00.00.0	Control		7.5
65 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000		02 ppm Cond. Temp(C)	9.1 564 15.0
96 Hour LC50	: Non-lethal			
95% fid. limits	* 0.0 - 0.0 *			
Comments	: Non-lethal			

ITY TEST PARAMETERS

00:96	8.0 9.3 574 14.5	8.1 9.3 570 14.5	8.2 9.2 569 14.5	8.2 9.2 566 14.5	8.3 9.4 560 14.5	8.4 9.4 554 14.5
72:00 96:00	14.5	14.5	14.5	14.5	14.5	14.5
1 M E	14.5	14.5	14.5	14.5	14.5	14.5
D T 24:00	14.5	14.5	14.5	14.5	14.5	14.5
O0:00	7.7 9.3 560 15.0	7.7 9.2 561 15.0	7.7 9.2 562 15.0	7.7 9.3 559 15.0	7.7 9.2 565 15.0	7.7 9.1 564 15.0
ш	pH 02 ppm cond. Temp(C)	l pH 02 ppm cond. Temp(C)				
TEST CONC.	100	99	40	20	10	Control

pH O2 ppm Cond. Temp(C)

Curve	••
ty	ВУ
Mortali	culated
of	- B
SLOPE	LC50 (

TOXICITY TEST PARAMETERS

Sample: 03900029

TOXICITY TEST REPORT

8.3 9.1 575 14.0

14.0

15.0

15.0

7.9 10.6 577 14.5

pH O2 ppm Cond. Temp(C)

14.0

15.0 15.0

7.9 11.0 585 14.0

pH 02 ppm Cond. Temp(C)

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

fumber: 03900029

8.3 9.2 568 14.0

14.0

15.0

15.0

7.9 10.2 567 15.0

pH O2 ppm Cond. Temp(C)

8.4 9.3 564 14.0

14.0

15.0

15.0

8.0 9.9 561 15.5

pH 02 ppm Cond. Temp(C)

8.4 9.4 563 14.0

14.0

15.0 15.0

8.0 9.8 558 16.0

pH 02 ppm Cond. Temp(C)

8.5 9.4 553 14.0

14.0

15.0

15.0

8.0 9.6 554 16.0

pH 02 ppm Cond. Temp(C)

8.5 9.3 550 14.0

15.0 15.0 14.0

сопралу	: Stelco Steel Hilton Works Hamilton, ONT
Region :	
Control point :	20 inch Mill, (1200)
Laboratory Sampling Method Sampled By Date Collected Received	BAR Grab P. Peidl 02/06/90 02/06/90 02/07/90 at: 1200
Type of Bioassay :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal : Weight(gm) : Length(mm) :	Rainbow trout
HORTALITY DATA	
CONC.	ED TIME TOTAL MORTALITY
x 00:00 24:00	24:00 48:00 72:00 96:00
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000
96 Hour LC50 :	Non-lethal
95% fid. limits :	% 0.0 - 0.0
Comments :	Single Concentration Test

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900090

TOXICITY TEST REPORT

	00:96	8.2 9.5 670 14.0	7.8 8.4 672 14.0	8.4 9.3 538 14.0	8.2 8.6 543 14.0
	72:00	15.0	15.0	15.0	15.0
	T 1 M E 0 48:00	15.0	15.0	15.0	15.0 15.0 15.0
	Z4:00	15.0	15.0	15.0	15.0
3900090	LAPSED TIME 00:00 24:00 48:00 72:00 96:00	7.8 9.5 667 15.0	7.8 9.5 667 15.0	7.8 8.3 536 15.0	7.8 8.3 536 15.0
Sample Number: 03900090	ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	100	Control	Control

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IESI CONDITIONS									
Company			Stelco Steel Hamilton, ONT (950006)	onT	Stelco Steel Hilton Works Hamilton, ONT (950006)	orks			
Region Industry	** **		West Central Iron and Steel	el					
Control point	**		20 inch Mill, (1200)	11,	1200)				
Laboratory Sampling Method Sampled By Date Collected Received Tested	** ** ** ** ** **	Grab Grab 03/06/90 03/06/90 03/07/90		8 ::	1125				
Type of Bioassay	• •	STATIC (Proto of liq	STATIC (Protocol of Liquid	to de efflu	otocol to determine liquid effluents to		the acute lethality fish. OME, 1983).	lethal 1983)	ity).
Test Animal Weight(gm) Length(mm)	** ** **	Raint	Rainbow trout	out					
MORTALITY DATA									
TEST E L A P CONC.	S	E D	Ξ.	ш			TOTAL MORTALITY	T.	
x 00:00 54:00		48:00	72:00	96:00	0				ж
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0000	0000	0000					0000
96 Hour LC50		Non-	Non-lethal	_					
95% fid. limits	**	0.0	•	0.0	34				
Comments		Singl	Single test	t con	concentration; Non lethal	ion;	Non let	hal	

TOXICITY TEST PARAMETERS

Sample: 03900180

TOXICITY TEST REPORT

	00:96	8.0 9.0 726 15.0	8.1 9.1 722 15.0	8.4 9.1 533 15.0	8.2 8.5 535 15.0
	72:00	15.0	15.0	15.0	15.0
	T I M E 0 48:00	14.0	14.0	14.0	14.0
	0:	14.0	14.0	14.0	14.0
03900180	E L A P S E D 00:00 24	8.0 11.3 702 15.0	8.0 11.3 702 15.0	7.9 9.6 539 15.0	7.9 9.6 539 15.0
Sample Number: 03900180	ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)	L pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	100	Control	Control

0000 36 STATIC (Protocol to determine the acute lethality of liquid effluents to fish. CME, 1983). : Single concentration test; 5% mort. a 100% TOTAL MORTALITY : Stelco Steel Hilton Works Hamilton, ONT (950006) West Central 20 inch Mill, (1200) at: 1205 00:00 24:00 48:00 72:00 96:00 0.0 : Rainbow trout 000 7 ME P. Piedl 04/03/90 04/03/90 04/04/90 : >100% 0.0 BAR Grab ELAPSED 000 .. 000 Type of Bioassay Laboratory Sampling Method Sampled By Date Collected Received Tested 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 Test Animal Weight(gm) Length(mm) 0000 Region Industry Comments Company 100 100 Control Control TEST CONC. *

14.0 14.0

14.5

Temp(C)

SLOPE of Mortality Curve LC50 Calculated By :

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TOXICITY TEST PARAMETERS

Sample: 03900270

TOXICITY TEST REPORT

Sample Number: 03900270

8.1 9.7 716 14.0 8.4 9.8 528 14.0 00:00 24:00 48:00 72:00 96:00 14.0 14.5 14.0 14.0 14.0 14.0 14.0 TIME 14.5 14.5 ELAPSED 8.0 9.8 729 15.0 8.0 9.8 729 15.0 Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. pH 02 ppm Cond. Control Control TEST CONC. 100 100

Sample Number: 01900049

H --

ELAPSED

136. 7. 28 15. 58.5 7. 15. 00:00 00:30 01:00 02:00 04:00 28:30 50:00 70:00 96:0 7.01.25 7.00.5 8.0 10.0 420 15.0 7.7 9.9 365 15.0 7.9 10.1 335 15.0 7.9 10.0 315 15.0 7.8 9.8 290 15.0 7.9 9.8 270 15.0 7.8 10.3 410 15.0 7.8 10.1 360 15.0 7.8 10.4 335 15.0 7.7 10.3 310 15.0 7.4 10.0 260 15.0 7.6 8.7 365 15.0 7.9 9.9 335 15.0 7.9 9.8 3.15 5.0 7.7 9.6 290 5.0 8.0 490 15.0 8.1 9.9 416 15.0 8.0 9.9 360 15.0 7.9 10.0 334 15.0 7.9 9.9 310 15.0 7.8 9.8 290 15.0 7.8 9.9 265 5.0 7.8 12.1 460 15.0 pH O2 ppm Cond. Temp(C) Cond. Temp(C) Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) [emp(C) pH 02 ppm Cond. pH 02 ppm PH 02 ppm pH 02 ppm cond. Temp(C) Cond.

TEST CONDITIONS		
Сопрапу	: Stelco Steel Hilton Works Hamilton, ONT (950006)	
Region Industry	: West Central : Iron and Steel	
Control point	: #2 60 inch Sewer, (1300)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	. BAR Grab P. Peidl 04/03/90 04/03/90 04/04/90 at: 1450	
Type of Bioassay	: STATIC (Protocol to determine the of liquid effluents to fish	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout	
MORTALITY DATA		
ELAPS	ED. TIME	TOTAL MORTALITY
00:00 24:00	48:00 72:00 96:00	×
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000	000000
96 Hour LC50	: Non-lethal	
95% fid. limits	: 0.0 - 0.0 %	
Comments	· non lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

		00:96	7.7 8.0 696 15.0	8.2 9.4 640 15.0	8.3 9.5 589 15.0	8.4 9.7 565 15.0	8.4 9.6 550 15.0	8.4 9.5 542 15.0	8.4 9.6 533 15.0
		72:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	I M E	48:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0
	D T	24:00	14.5	14.5	14.5	14.5	14.5	14.5	14.5
3900267	LAPSE	00:00	8.5 9.6 685 15.0	8.2 9.3 636 15.0	8.0 9.3 605 15.0	8.0 9.3 568 15.0	8.0 9.2 557 15.0	8.0 9.3 549 15.0	7.9 8.9 533 15.0
Sample Number: 03900267	ш		pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)					
Sample	TEST	2	100	9	07	20	10	50	Control

TEST CONDITIONS				
Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	Sample TEST CONC.	Sample Number: 03900557 TEST E L A P S CONC. 00:	03900557 E L A P S 00:0
Control point Laboratory Sampling Method	: #2 60 inch Sewer, (1300) : BAR : Grab	100	PH 02 ppm Cond.	8,9,8
Sampled By Date Collected Received Tested	: P.Peidl : 07/03/90 : 07/04/90 at: 1605	65	Temp(C) PH O2 ppm Cond.	ကို ဆလူ့လွန်
Type of Bioassay	: STATIC (Protocol to determine the scute lethality of liquid effluents to fish. OME, 1983). : Rainbow trout	40	PH 02 ppm cond.	
Weight(mm) Length(mm) MORTALITY DATA		20	pH 02 ppm Cond. Temp(C)	7. 9. 55
CONC. E L A P	ELAPSED TIME TOTAL HORTALITY X 00:00 24:00 48:00 72:00 96:00	10	pH 02 ppm Cond. Temp(C)	7. 9. 54.
100 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		5 Control		15.55
96 Hour LC50 95% fid. limits Comments	: Non-lethal : 0.0 - 0.0 % : Non lethal		Temp(C)	5

00 24:00 48:00 72:00 96:00 ED TIME

7.7 8.3 642 15.5	7.8 8.3 600 15.5	8.3 9.0 567 15.5	8.1 8.4 548 15.5	8.4 9.1 532 15.5	8.2 8.6 535 15.5	8.1 8.2 529 15.5
16.0	16.0	16.0	16.0	16.0	16.0	16.0
15.5	15.5	15.5	15.5	15.5	15.5	15.5
15.5	15.5	15.5	15.5	15.5	15.5	15.5
8.3 65.4 75.5	8.0 9.7 608 15.5	7.9 7.9 581 15.5	7.9 9.7 551 15.5	7.8 9.7 540 15.5	7.8 9.7 538 15.5	7.8 9.7 534 15.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	L pH 02 ppm Cond. Temp(C)
100	9	07	20	10	10	Control

Sample Number: 03900684 TEST CONC. 000000 × (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY : Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel #2 60 inch Sewer, (1300) T. Hibberd 08/14/90 08/14/90 08/15/90 at: 1425 × 00:00 24:00 48:00 72:00 96:00 0.0 000000 : Rainbow trout T HE : Non-lethal : Non-lethal 000000 : STATIC 0.0 BAR Grab ELAPSED 000000 000000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 000000 Test Animal Weight(gm) Length(mm) Region Industry Comments Control Company TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900684

TOXICITY TEST REPORT

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

100	99	07	20	10	5	Control
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)
8.8 8.8 571 16.0	8.4 8.7 559 16.0	8.6 8.6 548 16.0	8.0 8.6 542 16.0	7.9 8.4 540 16.0	7.9 8.4 538 16.0	7.9 8.4 537 16.0
15.5	15.5	15.5	15.5	15.5	15.5	15.5
15.0	15.0	15.0	15.0	15.0	15.0	15.0
15.5	15.5	15.5	15.5	15.5	15.5	15.5
8.0 7.8 575 15.5	8.9 8.9 560 15.5	8.3 8.9 546 15.5	8.3 9.0 541 15.5	8.3 9.0 540 15.5	8.3 9.0 537 15.5	8.4 9.1 534 15.5

TOXICITY TEST PARAMETERS

Sample Number: 03900189

	00:96	8.2 9.9 726 15.5	8.3 9.8 659 15.5	8.3 9.7 614 15.5	8.4 9.7 575 15.5	8.4 9.8 549 15.5	8.4 9.7 543 15.5	8.4 10.0 526 15.5
	72:00 96:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0
T E	48:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0
1	24:00	14.0	14.0	14.0	14.0	14.0	14.0	14.0
LAPSE	00:00	8.3 11.0 721 15.0	8.0 9.8 660 15.0	8.0 9.4 608 15.0	7.9 9.2 571 15.0	7.9 9.1 554 15.0	7.9 8.7 543 15.0	7.9 8.6 534 15.0
		pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)					
TEST	3 % CON CONTRACT	100	99	70	20	10	20	Control

00000 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY East Side Filter Stage 1, (1900) : Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel 00:00 04:00 24:00 48:00 72:00 96:00 00000 at: 1500 0.0 : Rainbow trout 00000 TIME Non-lethal . grab Grab 11/14/89 11/14/89 11/15/89 : Non lethal 0.0 ELAPSED 00000 00000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA 96 Hour LC50 Control point 00000 Test Animal Weight(gm) Length(mm) Region Industry Comments Control 10 20 40 65 100 Company TEST CONC. ×

TOXICITY TEST PARAMETERS

Sample: 03890264

TOXICITY TEST REPORT

	00:96	8.5 9.3 561 14.0	8.4 9.3 569 14.0	8.4 9.1 571 14.0	8.4 9.2 583 14.0	8.3 9.3 606 14.0	8.1 9.3 610 14.0
	72:00 96:00	14.0	14.0	14.0	14.0	14.0	14.0
	48:00	14.0	14.0	14.0	14.0	14.0	14.0
	1 M E 24:00	15.0	15.0	15.0	15.0	15.0	15.0
		15.0	15.0	15.0	15.0	15.0	15.0
3890264	LAPSED T 00:00 04:00	7.6 7.1 560 15.0	7.6 7.1 564 15.0	7.6 7.2 566 15.0	7.5 7.5 574 15.0	7.6 7.8 602 15.0	7.6 8.1 610 15.0
Sample Number: 03890264	ш .	pH 02 ppm cond. Temp(C)					
Sample	TEST CONC.	Control	10	20	07	92	100

	00:96	8.1 9.3 630 14.5	8.1 9.2 608 14.5	8.3 9.2 595 14.5	8.1 9.0 585 14.5	8.4 9.4 574 14.5	8.4 9.4 569 14.5
	72:00	14.5	14.5	14.5	14.5	14.5	14.5
H E	8:00	14.5	14.5	14.5	14.5	14.5	14.5
-	7 00:57	14.5	14.5	14.5	14.5	14.5	14.5
LAPSED	00:00 24:00 48:00 72:00 96:00	7.6 8.8 611 15.0	7.6 8.8 596 15.0	7.7 8.8 584 15.0	7.7 8.8 577 15.0	7.6 8.8 573 15.0	7.6 8.9 571 15.0
ш		pH 02 ppm cond. Temp(C)	ol pH O2 ppm Cond. Temp(C)				
TEST		100	59	07	20	10	Control

				Comme	M. Thorse 070	2000
Company	: Stelco Stee	Stelco Steel Hilton Works		sample	sample Number: 03900027	00057
Region Industry	Hamilton, ONT (950006) : West Central : Iron and Steel	on T II eel		TEST CONC.	П	E L A P S E 00:00
Control point	: East Side F	East Side Filter Stage 1, (1900) BAR	(1900)	100	#G.0	20
Sampling Method Sampled By Date Collected	Grab P.Peidl 01/16/90				Cond. Temp(C)	15.0
Received	01/16/90	at: 1700		99	pH 02 ppm cond. Temp(C)	7.8 9.2 9.6 15.0
Type of Bloassay	: STATIC (Protocol t of Liquid e	o determine the ffluents to fig	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	0%	pH 02 ppm	8.5
Test Animal Weight(gm) Length(mm)	: Rainbow trout	ut		20	Temp(C)	7 7
HORTALITY DATA					O2 ppm Cond. Temp(C)	8.8 5.73
TEST E L A P	SED TIME	ш	TOTAL MORTALITY	10	pH 02 ppm	88
x 00:00 24:0	00:00 24:00 48:00 72:00 96:00	00:96	34		Cond. Temp(C)	25
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	00000	50	pH O2 ppm Cond. Temp(C)	8.0 8.7 556 15.0
		00		Control	pH 02 ppm cond. Temp(C)	7.9 9.2 9.2 550 15.0
96 Hour LC50	: Non-lethal					
95% fid. limits	. 0.0 :	2 0.0				
Comments	: Nonlethal					

TOXICITY TEST PARAMETERS

Sample: 03900027

TOXICITY TEST REPORT

00:00 24:00 48:00 72:00 96:00

ELAPSED TIME

8.0 9.1 670	8.2 9.0 624 14.0	8.3 9.1 605 14.0	8.3 9.0 585 14.0	8.4 9.0 567 14.0	8.4 8.9 559 14.0	8.3 8.9 558 14.0
14.0	14.0	14.0	14.0	14.0	14.0	14.0
15.0	15.0	15.0	15.0	15.0	15.0	15.0
15.0	15.0	15.0	15.0	15.0	15.0	15.0
7.6 9.1 661 15.0	7.8 9.2 616 15.0	7.9 8.5 592 15.0	7.9 8.8 573 15.0	8.0 8.4 565 15.0	8.0 8.7 556 15.0	7.9 9.2 550 15.0
pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)
100	65	05	20	10	ľ.	Control
	pH 7.6 02 ppm 9.1 cond. 661 Temp(C) 15.0 15.0 14.0 1	pH 7.6 02 ppm 9.1 661 15.0 15.0 14.0 1 15.0 15.0 15.0 14.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	pH 7.6 cond. 15.0 15.0 15.0 14.0 1 1 cmp(C) 15.0 15.0 15.0 14.0 1 1 cmp(C) 15.0 15.0 15.0 14.0 1 1 cmp(C) 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	pH 9.1 cond. 15.0 15.0 14.0 1 1 cond. 15.0 15.0 15.0 14.0 1	pH 9.1	pH cond. 15.0 15.0 15.0 14.0 1 1 1 emp(C) 15.0 15.0 15.0 14.0 1

Control point

Region Industry

Company

MORTALITY DATA

TEST CONC.

Test Animal Weight(gm) Length(mm)

96 Hour LC50

Comments

0000

100 100 Control

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900177

00:96	7.9 8.8 760 14.5	8.0 8.9 758 14.5	8.4 9.1 546 14.5	8.2 8.7 548 14.5
72:00	15.0	15.0	15.0	15.0
T I M E	14.0	14.0	14.0	14.0 14.0 15.0
D T	14.0	14.0	14.0	14.0
LAPSED TIME 00:00 24:00 48:00 72:00 96:00	7.7 9.4 723 15.0	7.7 9.4 723 15.0	7.9 9.5 548 15.0	7.9 9.5 548 15.0
ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST CONC.	100	100	Control	Control

TOXICITY TEST PARAMETERS

Sample: 01900053

TOXICITY TEST REPORT

TEST CONDITIONS

Mainten, ONT Control	Company	: Stelco Steel Hilton Works	Sample	Sample Number: 01900053	000053					
Figure F		Hamilton, ONT	TEST		P S E	Ξ				
100 pH 27 7.6 7.8 7.	Region Industry		2 **		00:00	30 01:00 02:00 0	04:00 29:30	20:00	71:00	0:96
10 10 10 10 10 10 10 10	Control point Laboratory Sampling Method Sampled By	MOE Grab Mark	100	pH 02 ppm cond. Temp(C)	7.2 8.7 560 15.0	7.6 9.9 560 15.0	7.8 9.9 550 15.0	7.8 10.3 550 15.0	7.8 9.8 560 15.0	7. 53.
Conditional Cond	Date Collected Received Tested	03/28/90 03/30/90 at:	9	pH 02 ppm Cond. Temp(C)		7.7 9.8 470 15.0	7.8 9.8 465 15.0	7.8 10.3 455 15.0	7.9 9.8 465 15.0	7. 9.
30 pH	Type of Bloassay	STATIC (Protocol to determine the acute of liquid effluents to fish. OME, Rainbow trout	70	pH O2 ppm Cond. Temp(C)		7.7 9.9 390 15.0	7.7 9.7 390 15.0	7.8 10.4 395 15.0	7.9 9.8 390 15.0	7. 10. 39
F L A P S E D T I H E TOTAL 20 pH 97.7 7.8 7.7 7.8 9.7 7.8 9.7	Length(mm) MORTALITY DATA	• ••	30	pH 02 ppm cond. Temp(C)		7.7 10.0 365 15.0	7.8 9.9 365 15.0	7.7 10.2 365 15.0	7.8 9.8 365 15.0	7. 9. 36
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		L TY 96:00	20	pH 02 ppm cond. Temp(C)		7.7 9.9 330 15.0	7.8 9.7 330 15.0	7.7 10.3 330 15.0	7.8 9.7 335 15.0	7. 9. 33
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000		10	pH O2 ppm Cond. Temp(C)		7.8 10.0 310 15.0	7.8 9.9 310 15.0	7.5 10.1 280 15.0	7.8 9.8 315 15.0	7. 10. 30 15.
: Non-lethal : 0.0 - 0.0 : MISA Audit	itrol 0		Contro			7.8 9.9 275 15.0	7.7 10.1 270 15.0	7.8 10.3 275 15.0	7.9 9.9 275 15.0	7. 25 15.
••	96 Hour LC50 95% fid. limits	Non-lethal								
	Comments									

TEST CONC. 36

SLOPE of Mortality Curve : LC50 Calculated By :

7.8 8.6 773 15.0 14.5 14.0 14.5 15.0 14.5 14.0 14.5 7.9 8.9 9.5 15.0 14.5 14.0 14.5 15.0 14.5 14.0 14.5	10	· Second	100 pH 02 ppm cond. Temp(C)	100 pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
7.8 8.6 773 15.0 14.5 14.0 14.5 15.0 14.5 14.0 14.5 7.9 8.9 9.5 15.0 14.5 14.0 14.5 15.0 14.5 14.0 14.5	ELA		£ .0	E .	md (0)	E .0
14.5 14.0 14.5 14.5 14.0 14.5 14.5 14.0 14.5	PSE	00:00	7.8 8.6 773 15.0			7.9 8.9 545 15.0
48:00 72:00 96:00 14.0 14.5 14.0 14.0 14.5 14.0 14.0 14.5 14.0 14.0 14.5 14.0 14.0 14.5 14.0 14.0 14.5 14.0 14.0 14.5 14.0		54:00	14.5	14.5	14.5	14.5
72:00 96:00 8.0 9.6 770 14.5 14.0 14.5 14.0 14.5 14.0 8.4 9.7 9.7 9.7 14.5 14.0	I M E	48:00	14.0	14.0	14.0	14.0
8.0 7.70 14.0 14.0 14.0 14.0 14.0 14.0 14.0 14.		72:00	14.5	14.5		14.5
		00:96	8.0 9.6 770 14.0	7.9 9.4 773 14.0	8.4 9.7 517 14.0	8.4 5.0 14.0

TEST CONDITIONS		
Company		
Region :		
Control point :	East Side Filter Stage 1,	(1900)
Laboratory Sampling Method Sampled By Date Collected Received	BAR Grab D. Johnston 05/01/90 05/02/90 at: 1430	
Type of Bioassay :	STATIC (Protocol to determine of liquid effluents to	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	Rainbow trout	
HORTALITY DATA		
TEST ELAPSICONC.	ED TIME	TOTAL MORTALITY
x 00:00 24:00 x	48:00 72:00 96:00	34
100 0 0 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000
96 Hour LC50 :	Non-lethal	
95% fid. limits :	% 0°0 - 0°0	
Comments	: Non lethal; single concentration test	tration test

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900345

TOXICITY TEST REPORT

8.1 9.5 798 14.5	8.1 9.5 808 14.5	8.4 9.6 503 14.5	8.4 9.5 5.18
14.5	14.5	14.5	14.5
15.0 14.5 14.5	15.0 14.5 14.5	15.0 14.5 14.5	15.0 14.5 14.5
15.0	15.0	15.0	15.0
7.8 8.6 806 15.5	7.8 8.6 806 15.5	7.9 9.4 551 15.5	7.9 9.4 551 551
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond.
100	100	Control	Control

TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TIME	00:00 24:00 48:00 72:00 96:00	16.0 15.5 16.0	16.0 15.5 16.0	0 15.5 16.0	16.0 15.5 16.0
LAPSED	00:00 24:0	7.5 7.7 740 15.0 16.	7.5 7.7 740 15.0 16.	7.8 8.2 543 15.0 16.0	7.8 8.2 543 15.0 16.
EL		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
EST		100	100	Control	Control

36 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY : Single Concentration Test; Non Lethal East Side Filter Stage 1, (1900) Stelco Steel Hilton Works Hamilton, ONT (950006) at: 1415 00:00 24:00 48:00 72:00 96:00 0.0 West Central Iron and Steel 0000 Rainbow trout TIME : Non-lethal BAR Grab P. Peidl 07/03/90 07/03/90 0000 0.0 ELAPSED 0000 0000 Laboratory Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 Test Animal Weight(gm) Length(mm) Industry Comments 100 100 Control Control Company Region TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900554

TOXICITY TEST REPORT

7.6 8.2 723 15.0 00:00 24:00 48:00 72:00 96:00 15.0 TIME 15.0 14.5 ELAPSED 7.4 8.2 732 15.5 Sample Number: 03900554 pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. TEST CONC. 100 100

15.0

14.5

15.0

Temp(C)

15.0

14.5

15.0

15.0

14.5

15.0

Temp(C) pH 02 ppm

Cond.

Control

pH 02 ppm Cond. Temp(C)

Control

7.9 9.9 534 15.5

: Single Concentration Test; non-lethal

Comments

03900685	
Sample:	
REPORT	
TEST	
TOXICITY	

TEST CONDITIONS				
Сотрапу	: Ste	Stelco Steel Hamilton, ONT	Stelco Steel Hilton Works Hamilton, ONT	orks
Region	West: Iron	West Central Iron and Steel	eel	
Control point	: East		Side Filter Stage 1,	1, (1900)
Laboratory Sampling Method Sampled By Date Collected Received Tested	Grab 17. H 08/14 08/14	/90 /90 /90	l at: 1430	
Type of Bioassay	STA (Pr	STATIC (Protocol t of liquid e	STATIC (Protocol to determine of liquid effluents to	the acute (ethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	88	Rainbow trout	ut	
MORTALITY DATA				
TEST E L A P	PSED	T	ш	TOTAL MORTALITY
x 00:00 24:	24:00 48:00	0 72:00 96:00	00:96	34
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000	0000	0000
96 Hour LC50	. Noi	Non-lethal		
95% fid. limits	. 0	0.0	2 0.0	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900685

00:96	8.0 9.0 633 15.5	8.0 9.0 635 15.5	8.3 9.1 541 15.5	8.3 9.0 541 15.5
P S E D	15.5	15.5	15.5	15.5
T I M E	15.0	15.0	15.0	15.0
D T 24:00	15.5	15.5	15.5	15.5
L A P S E D 00:00 2	7.9 8.2 626 16.0	7.9 8.2 626 16.0	7.8 8.4 535 16.0	7.8 8.4 535 16.0
ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

Сопрапу	: Stelco Steel Hilton Works Hamilton, ONT	S
Region	(Yound): West Central: Iron and Steel	
Control point	: East Side Filter Stage 2, (2000)	, (2000)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 11/14/89 : 11/14/89	
Type of Bioassay	: STATIC (Protocol to determine the of liquid effluents to f	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	
MORTALITY DATA		
TEST E L A P	SED TIME	TOTAL MORTALITY
x 00:00 04:00	0 24:00 48:00 72:00 96:00	*
Control 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		00000
96 Hour LC50	: Non-lethal	
95% fid. limits	: 0.0 - 0.0 :	
Comments	· Non lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03890265

TOXICITY TEST REPORT

14.0	14.0 14.0	14.0 14.0	14.0 14.0	14.0 14.0	14.0 14.0
7.8	7.9	7.8	7.8	7.8	7.7
8.8	8.8	8.7	8.9	8.9	9.0
561	566	568	570	579	592
15.5 15.0	15.5 15.0	15.5 15.0	15.5 15.0	15.5 15.0	15.5 15.0
pH	pH	pH	pH	pH	pH
02 ppm	02 ppm	O2 ppm	02 ppm	02 ppm	02 ppm
Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
	7.8 8.8 561 15.5 15.0	pH 8.8 8.8 Cond. 561 15.0 PH 7.9 PH 8.8 Cond. 560 15.0 PH 8.8 Cond. 15.5 15.0 Temp(C) 15.5 15.0	pH 8.8 8.8 Cond. 15.5 15.0 BH 8.8 Cond. 15.5 15.0 BH 8.8 Cond. 15.5 15.0 BH 8.7 BH 8.7 BH 8.7 BH 8.7 BH 8.7 Cond. 15.5 15.0 Lemp(C) 15.5 15.0	pH 8.8 8.8 6.0 15.5 15.0 ph 8.8 8.8 6.0 15.5 15.0 ph 8.8 6.8 6.0 cond. 15.5 15.0 ph 7.8 cond. 15.5 15.0 ph 7.8 cond. 15.5 15.0 ph 7.8 0.2 ppm 8.9 cond. 15.5 15.0 cond. 15.5 15.0 th 15.5 th 15.5 th 15.0 th 15.5 th 15	pH 8.8 8.8 6.0 15.5 15.0 15.5 15.0 ph 8.8 8.8 0.2 ppm 8.8 8.8 15.0 cond. 15.5 15.0 ph 8.7 15.5 15.0 cond. 15.5 15.0 ph 6.2 ppm 8.7 15.5 15.0 ph 6.2 ppm 8.7 15.5 15.0 ph 6.2 ppm 8.7 15.5 15.0 cond. 15.5 15.0

	00:96	7.9 8.7 766 15.0	8.1 9.0 761 15.0	8.4 9.1 529 15.0	8.4 9.2 528 15.0
	72:00	15.0	15.0	15.0	15.0
TIME	00:87	14.0 14.0 15.0	14.0 14.0 15.0	14.0	14.0 14.0 15.0
	54:00	14.0	14.0	14.0	14.0
ELAPSED	00:00 24:00 48:00 72:00 96:00	7.7 9.4 725 15.0	7.7 9.4 725 15.0	7.9 9.4 545 15.0	7.9 9.4 545 15.0
ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST		100	100	Control	Control pH 02 ppm Cond. Temp(C)

TOXICITY TEST PARAMETERS

Sample: 01900052

TOXICITY TEST REPORT

TEST CONDITIONS

any stry stry stry stry stry stry stry str		Sample Number: 01900052	: 01900052			
Second point Series Second point Second poi		TEST	E D 11			
The point Teast Side Filter Stage 2, (2000) 100 pH 7.3 7.8 8.0 9.8 9		, , ,	00:00 00:30 01	:00 02:00 04:00 29:00	70:00 96:	00
State Stat	: East Side Filter Stage 2, (20				0	0
Secretary 1978/979 12 1200 12 1200 12 12 12	** ** ** *		- 6		9.8	8000
Of Bloassay Sfridge Sf	: 03/28/90 : 03/30/90 at:		E (3)		7.8 9.6 475 15.0	65.0
Animal : Rainbow trout Tremp(C) 15.0 15	• •		E		8°0 8°6	0.80
Second S	** (Temp((3)		15.0 1	0.0
Fig. Lamber Fig.			E		8.0 9.8 370	595
F L A P S E D T I M E	MORTALITY DATA	Temp((2)		15.0 1	0.0
00:00 00:30 01:00 02:00 04:00 29:00 70:00 96:00	ELAPSED TIME MO		E		9.8	8.00
10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00:00 00:30 01:00 02:00 04:00 29:00 70:00 96:00	Temp((2)		15.0 1	.0
trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			E ()		7.9 9.8 315 15.0	8.0000
: Non-lethal : 0.0 - 0.0 : MISA Audit	trol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		E (3)		7.8 9.8 270 15.0	7.6 265 5.0
: 0.0 - 0.0 : MISA Audit	**					
**	0.0 - 0.0 :					
	••					
						١

Company

TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

		00:96
		00:00 24:00 48:00 72:00 96:00
	TIME	48:00
		24:00
03900266	ELAPSED	00:00
umber:	П	
Sample	TEST	**

7.9 9.3 788 14.0	8.0 9.4 787 14.0	8.4 9.6 524 14.0	8.3 9.4 527 14.0
14.5	14.5	14.5	14.5
14.5 14.0 14.5	14.5 14.0 14.5	14.5 14.0 14.5	14.5 14.0 14.5
14.5	14.5	14.5	14.5
7.9 8.5 774 15.0	7.9 8.5 774 15.0	7.9 9.1 534 15.0	7.9 9.1 534 15.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	l pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)
100	100	Control	Control

Stelco Stee Hamilton, 0 (950006) Hamilton, 0 (950006) Hamilton and St	TEST CONDITIONS	
West Central	Сопрапу	
int : East Side Filter Stage 2, (2000) stand : Grab	Region Industry	-
## SEAR STATIC ST	Control point	East Side Filter Stage 2,
ATA E L A P S E D T I M E O 0 0 0 0 O 0 0 0 0 O 0 0 0 0 O 0 0 0 0	Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab D. Johnston 05/01/90 05/01/90 05/02/90 at:
Sainbow trout Sainbow trou	Type of Bioassay	STATIC (Protocol to determine of liquid effluents to
E L A P S E D T I M E HORTALITY 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Test Animal Weight(gm) Length(mm)	
E L A P S E D T I M E HORTALITY 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MORTALITY DATA	
00:00 24:00 48:00 72:00 96:00	ELAP	ED TIME
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
LC50 : Non-lethal limits : 0.0 -	0000	0000
limits : 0.0 -	96 Hour LC50	
: Non Lethal:	95% fid. limits	0.0 - 0.0
"ABLIAN LION "	Comments	: Non lethal; single concentration test

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900346

TOXICITY TEST REPORT

	00:96	8.2 9.7 805 14.5	8.2 9.8 809 14.5	8.4 9.9 504 14.5	8.4 9.9 528 14.5
	PSED TIME 00:00 24:00 48:00 72:00 96:00	14.5	14.5	14.5	14.5
	T I M E	15.0	15.0	15.0	15.0 14.5
	D T 24:00	15.0	15.0	15.0	15.0
3900346	00:00	7.8 8.1 805 15.5	7.8 8.1 805 15.5	7.9 9.4 553 15.5	7.9 9.4 553 15.5
Sample Number: 03900346	ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	100	Control	Control

ж

SLOPE of Mortality Curve : LC50 Calculated By :

		00:96	7.8 8.3 760 16.0	7.9 8.5 763 16.0	8.3 8.5 530 16.0	8.8 8.8 527 16.0
		00:00 24:00 48:00 72:00 96:00	16.0	16.0	16.0	16.0
	TIME	48:00	15.5	15.5	15.5	15.5
	D 1	24:00	15.5	15.5	15.5	15.5
3900445	ELAPSED	00:00	7.6 7.9 779 15.0	7.6 7.9 779 15.0	7.8 8.3 541 15.0	7.8 8.3 541 15.0
Sample Number: 03900445	m		pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	×	100	100	Control	Control

0000 36 STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL MORTALITY : Single concentration Test; Non Lethal East Side Filter Stage 2, (2000) : Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel BAR Grab P. Peidl 07/03/90 07/03/90 at: 1410 00:00 24:00 48:00 72:00 96:00 0.0 0000 : Rainbow trout TIME : Non-lethal 0.0 ELAPSED 0000 0000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay TEST CONDITIONS 95% fid. limits MORTALITY DATA Control point 96 Hour LC50 0000 Test Animal Weight(gm) Length(mm) Region Industry 100 100 Control Comments Company TEST CONC. 34

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900555

TOXICITY TEST REPORT

Sample Number: 03900555

00:96	7.7 8.8 726 15.0	7.8 8.8 736 15.0	8.3 9.1 530 15.0	8.4 9.2 531 15.0
P S E D T I M E 00:00 24:00 48:00 72:00 96:00	15.0	15.0	15.0	15.0
T I M E	14.5	14.5	14.5	15.0 14.5
D T 24:00	15.0	15.0	15.0	15.0
LAPSED 00:00 2	7.3 7.5 736 15.5	7.3 736 15.5	7.9 9.8 531 15.5	7.9 9.8 531 15.5
ш	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST CONC.	100	100	Control	Control

TEST CONC. ж 439

SLOPE of Mortality Curve : LC50 Calculated By :

00:00 24:00 48:00 72:00 96:00	8.0	8.0	8.3	8.3
	9.0	9.1	9.0	9.0
	629	624	538	537
	15.5 15.5	15.5 15.5	15.5 15.5	15.5 15.5
48:00 7	15.0	15.0	15.0	15.0
24:00 4	15.5	15.5	15.5	15.5
<	7.9	7.9	7.9	7.9
	8.5	8.5	8.2	8.2
	618	618	538	538
	16.0	16.0	16.0	16.0
E L	pH	pH	pH	pH
	02 ppm	02 ppm	O2 ppm	02 ppm
	Cond.	Cond.	Cond.	Cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)
CONC.	100	100	Control	Control

COMPANY: Stelco Steel Hilton Works, Hamilton

(950006)

SECTOR: Iron and Steel REGION: West Central

· SUMMARY

Data for 74 Daphnia magna acute lethality toxicity tests conducted on samples from nine different sampling points collected between November 1989 and August 1990 were submitted by Stelco Steel Hilton Works of Hamilton. This plant was shut down between August and September due to a labour dispute therefore there were no test results submitted for these months.

Samples from west side open cut (100), northwest outfall (200) and #2 60 inch sewer (1300) were either not acutely lethal to Daphnia, or had LC50s > 100%. Audit testing conducted by the Ministry indicated samples from outfall #100 and #200 were not acutely lethal to Daphnia. A test conducted in the Ministry laboratory on a sample from outfall #1300 collected in March had a 48 h LC50 > 100%.

Eight of ten samples from east side filter stage 1 (1900) were not acutely lethal to Daphnia. Ona sample had an LC50 > 100% and the January sample induced the unusual toxicity curve (bell shaped) described for some effluents from Dofasco. Five of ten samples from east side filter stage 2 (2000) were not acutely lethal to Daphnia and three samples had LC50s > 100 %. Two samples (January and March) induced the bell shaped toxicity curve. Ministry audits of these outfalls conducted on samples collected in March indicated the samples were not acutely lethal to Daphnia.

Five of ten samples from north outfall (400) and two of four samples from east side filter (601) were not acutely lethal to Daphnia. One sample from each had a bell shaped lethality curve, and the remaining samples had LC50s > 100%. Ministry audit tests of each of these outfalls were nonlethal.

#1 60 inch sewer (602), #2 rod mill (1100), and 20 inch mill (1200) effluents were the most toxic from this company. Three samples from the #1 60 " sewer were nonlethal, three samples had LC50s > 100 % and the November sample induced the unusual bell curve response. The remaining three samples had 48 h LC50s of 50, 56 and 70 % effluent. There were two nonlethal samples from the #2 rod mill and none from the 20 " mill. Two samples from the #2 rod mill had LC50s > 100%, and the November sample induced the bell shaped lethality response. The remaining four samples had 48 h LC50s of 41, 54, 78 and 84 % effluent. Four samples from the 20" mill had LC50s > 100 %, and the remaining two samples generated LC50s of 12 and 32 % effluent. Sample tested in the Ministry laboratory in March were not acutely lethal to Daphnia.

West Side Open Cut

03900031 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non Lethal

02900057 sampled: 03/28/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments:

03900262 sampled: 04/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900350 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900439 sampled: 06/05/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900591 sampled: 07/10/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100

03900680 sampled: 08/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

Northwest Outfall

03900032 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non Lethal

02900056 sampled: 03/28/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments:

non-lethal 03900263 sampled: 04/03/90

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900367 sampled: 05/08/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900440 sampled: 06/05/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900556 sampled: 07/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900681 sampled: 08/14/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

North Outfall

03890263 sampled: 11/14/89 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03890320 sampled: 12/05/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900033 sampled: 01/16/90 LC50 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100

03900088 sampled: 02/06/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900175 sampled: 03/06/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50>100

02900058 sampled: 03/28/90 LC50: 5.0 - 15.0 %

95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900264 sampled: 04/03/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

03900348 sampled: 05/01/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900441 sampled: 06/05/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100

03900552 sampled: 07/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

non-lethal 03900682 sampled: 08/14/90

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

East Side Filter

03890323 sampled: 12/05/89 LC50: 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100%

03890319 sampled: 12/05/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900027 sampled: 01/16/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900028 sampled: 01/16/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900086 sampled: 02/06/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900085 sampled: 02/06/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

#1 60 inch Sewer

03890268 sampled: 11/14/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03890318 sampled: 12/05/89 LC50: 70.7 %

95% fid. limits: 50.0 - 100.0 %

comments:

03900067 sampled: 01/24/90 LC50 95% fid. limits: 0.0 - 0.0 % LC50: >100 %

comments: LC50 >100

03900091 sampled: 02/06/90 LC50: 49.7 %

95% fid. limits: 36.9 - 66.9 % slope: 3.8

comments: Lethal

03900176 sampled: 03/06/90 LC50: 56.1 %

95% fid. limits: 44.0 - 71.3 %

comments: Lethal

02900050 sampled: 03/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: High DO

03900268 sampled: 04/03/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900344 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900442 sampled: 06/05/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100

03900551 sampled: 07/03/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100

03900683 sampled: 08/14/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

#2 Rod Mill

03890266 sampled: 11/14/89 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03890321 sampled: 12/05/89 LC50: 84.6 %

95% fid. limits: 59.3 - 120.5 % slope: 3.2

comments:

03900030 sampled: 01/16/90 LC50: 78.0 %

95% fid. limits: 65.1 - 93.4 % slope: 9.0

comments: Lethal

03900089 sampled: 02/06/90 LC50: 41.2 %

95% fid. limits: 31.5 - 53.8 % slope: 4.3

comments: Lethal

03900179 sampled: 03/06/90 LC50: 54.4 %

95% fid. limits: 42.0 - 70.6 % slope: 5.7

comments: Lethal

02900055 sampled: 03/27/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Many floaters at 60% and 100%.

03900269 sampled: 04/03/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900343 sampled: 05/01/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900443 sampled: 06/05/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100

03900550 sampled: 07/03/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non lethal

20 inch Mill

03890267 sampled: 11/14/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100%

03890322 sampled: 12/05/89 LC50: 11.9 %

95% fid. limits: 6.3 - 22.4 %

comments:

03900029 sampled: 01/16/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900090 sampled: 02/06/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

03900180 sampled: 03/06/90 LC50: 32.2 %

95% fid. limits: 16.5 - 81.4 % slope: 1.3

comments: Lethal

03900270 sampled: 04/03/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

#2 60 inch Sewer

02900049 sampled: 03/26/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments:

03900267 sampled: 04/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

Stelco Steel Hilton Works (continued)

03900557 sampled: 07/03/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100

03900684 sampled: 08/14/90 non-1 95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

East Side Filter OW

Rain Gauge

Intake Water

East Side Filter Stage 1

03890264 sampled: 11/14/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900177 sampled: 03/06/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

02900053 sampled: 03/26/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900265 sampled: 04/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900345 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900444 sampled: 06/05/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900554 sampled: 07/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900685 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

Stelco Steel Hilton Works (continued)

East Side Filter Stage 2

03890265 sampled: 11/14/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900178 sampled: 03/06/90 LC50: >100 %

95% fid. limits: 0.0 -0.0 %

comments: Lethal; No concentration:effect relationship

02900052 sampled: 03/26/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900266 sampled: 04/03/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

03900346 sampled: 05/01/90 non-95% fid. limits: 0.0 - 0.0 % non-lethal

comments: Non-lethal

03900445 sampled: 06/05/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900555 sampled: 07/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900686 sampled: 08/14/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

TEST CONDITIONS			IOXICI	IOXICIIT LESI PAKAMETERS	METERS
Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel		Sample TEST CONC.	Sample Number: 03900031 TEST E L A P S CONC. 00:	03900031 E L A P S E 00:00
Control point	: West Side Open Cut, (100)				
Laboratory Sampling Method Sampled By Date Collected	BAR Grab P. Peidl 01/16/90		100	pH 02 ppm cond. Temp(C)	8.6 9.3 745 20.0
Tested	: 01/17/90 at: 950		50	DE PPM	9.0
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	y Toxicity	25	Temp(C)	20.0
Test Animal Weight(gm) Length(gm)	. D. magna			02 ppm Cond. Temp(C)	4.8 410 20.0
MORTALITY DATA			13	pH 02 ppm cond.	8.8
CONC.	SED TIME	TOTAL MORTALITY	9	Temp(C) pH	20.0
x 00:00 24:0	24:00 48:00	%		02 ppm Cond.	327
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	Control	lemp(C)	8.4 8.8 296 20.0 20.0
48 Hour LC50	: Non-lethal				
95% fid. limits	* 0.0 - 0.0 :				
Comments	: Non Lethal				

8.2 8.6 743 20.0 8.3 8.7 521 521

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

00:00 24:00 48:00

8.3 8.8 411 20.0

19.0

19.0

8.3 8.9 360 20.0

19.0

8.3 8.8 330 20.0

19.0

8.8 297 20.0

19.0

MISA Daphnia			SLOPE of Mortality Curve LC50 Calculated By :	Curve :	
	TOXICITY TEST REPORT	Sample: 02900057	TOXICITY TEST PARAMETERS	METERS	
TEST CONDITIONS Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel		Sample Number: 02900057 TEST E L A P S CONC. 00:	LAPSED TIME 00:00 01:00 02:00 04:00 24:00 48:00	00:
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	: West Side Open Cut, (100) : MDE : Grab : 03/28/90 : 03/29/90 : 03/30/90 at: 1200		100 pH Cond. Cond. 1 Temp(C) 60 pH Cond. Cond.	8.3 9.8 818 20.0 20.0 8.2 9.4 621	20.05 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Type of Bioassay Test Animal Weight(gm) Length(mm)	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna	ty Toxicity	30 pH 02 ppm 02 ppm Cond. Temp(C) 15 pH		20.0 8.0 8.4 463 20.0
MORTALITY DATA TEST E L A P CONC. % 00:00 01:0	S E D T I M E 00 02:00 04:00 24:00 48:00	TOTAL HORTALITY	02 ppm Cond. Temp(C) 5 pH 02 ppm Cond. Temp(C)	9.0 390 20.0 7.9 8.9 8.9 8.9 20.0	8.4 388 20.0 7.9 8.4 343
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	Control pH 02 ppm Cond. Temp(C)	7.7 9.0 8.314 314 20.0	7.8 8.4 314 20.0
48 Hour LC50 95% fid. limits Comments	: >100% : 0.0 - 0.0 %				

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

E E	48:00	8.1 7.4 904 19.5	8.2 8.3 607 19.5	8.4 8.6 448 19.5	8.8 371 19.5	8.8 328 19.5	8.8 2.93 19.5
<u>-</u>	24:00 4	19.0	19.0	19.0	19.0	19.0	19.0
LAPSED	00:00	8.6 8.9 945 19.5	8.8 8.8 626 19.5	8.4 8.8 462 19.5	8.8 383 19.5	8.8 339 19.5	8.4 8.9 302 19.5
ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST	CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

	I M E	48:00	8.1 8.6 19.0	8.3 8.7 561 19.0	8.3 430 19.0	8.3 369 19.0	8.8 333 19.0	8.3 9.3 304 19.0
	D T	24:00	20.0	20.0	20.0	20.0	20.0	20.0
3900350	LAPSE	00:00	8.3 9.1 817 20.0	8.3 9.1 560 20.0	8.3 9.1 433 20.0	8.3 9.0 368 20.0	8.3 9.0 331 20.0	8.4 9.0 289 20.0
Sample Number: 03900350	ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
Sample	TEST	2	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

I M E	48:00	7.9 8.4 768 19.5	8.0 737 19.5	8.1 8.8 416 19.5	8.1 8.8 361 19.5	8.1 327 19.5	8.2 8.8 297 19.5
1	24:00	19.5	19.5	19.5	19.5	19.5	19.5
LAPSEI	00:00	8.0 8.8 772 20.5	8.2 9.0 535 20.5	8.3 9.0 414 20.5	8.3 9.1 359 20.5	8.3 325 20.5	8.3 296 20.5
w		pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
TEST CONC.	*	100	20	25	13	~	Control

SLOPE of Mortality Curve : LC50 Calculated By :

TEST CONDITIONS							
Company	. Stelen Steel Wilton Unrie	,	Sample	Sample Number: 03900591	10591		
Region			TEST CONC.	E L	ELAPSE	PSED TIME	TIME
Industry	: Iron and Steel		₹		00:00	00:47	00:04
Control point Laboratory Sampling Method Sampled By		100)	100	pH 02 ppm Cond. Temp(C)	8.2 8.7 692 20.5	20.5	8.1 8.7 690 19.5
Received Tested	: 07/12/90 : 07/12/90 at: 1535		20	pH O2 ppm Cond. Temp(C)	8.2 8.9 497 20.5	20.5	8.8 497 19.5
Tect Animal		Lethality Toxicity 1988)	25	pH 02 ppm cond.	399	1	88.3
Weight(gm) Length(mm)			13	PH PH	8.2	20.5	2.8 2.8
MORTALITY DATA				Cond. Temp(C)	354	20.5	354
CONC.	SED TIME	TOTAL MORTALITY	9	pH 02 ppm	8.5		88.3
x 00:00 24:00	0 48:00	3 -¢		Cond. Temp(C)	329	20.5	327
100 0 1 2.55 0 0 1 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0-0-00	080800	Control	DH DDM OZ PDM Cond.	8.2 9.0 308 20.5	20.5	8.3 9.0 307 19.5
48 Hour LC50	: >100%						
95% fid. limits	: 0.0 - 0.0 x						
Comments	: LC50 > 100						

TOXICITY TEST PARAMETERS

1 M E	8.0	8.1	8.2	8.2	8.2	8.2
	8.5	8.6	8.6	8.7	8.7	8.7
	1079	677	486	402	347	305
	20.0	20.0	20.0	20.0	20.0	20.0
PSED TIME 00:00 24:00 48:00	20.5	20.5	20.5	20.5	20.5	20.5
00:00	8.3	8.3	8.3	8.3	8.4	8.3
	9.0	9.1	9.1	9.2	9.1	9.2
	1074	680	485	401	339	289
	19.5	19.5	19.5	19.5	19.5	19.5
ш	pH	pH	pH	pH	pH	1 pH
	02 ppm					
	Cond.	Cond.	Cond.	cond.	cond.	Cond.
	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
TEST CONC.	100	20	25	13	9	Control

MISA Daphnia

TEST CONDITIONS		
Company	: Stelco Steel Hilton Works Hamilton, ONT (950006)	rrks
Region Industry	: West Central : Iron and Steel	
Control point	: Northwest Outfall, (200)	(0)
Laboratory Sampling Method Sampled By Date Collected Received	: BAR : Grab : P. Piedl : 01/16/90 : 01/16/90 at: 955	
Type of Bioassay	: STATIC (Daphnia magna Acute Lo Test Protocol. OME, 1	Lethality Toxicity 1988)
Test Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
CONC.	SED TIME	TOTAL MORTALITY
x 00:00 24:00	24:00 48:00	**
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	: 0.0 - 0.0 :	
Compense	: Non Lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

1 M E	8.8 605 20.0	8.8 8.8 451 20.0	8.3 8.8 374 20.0	8.3 337 20.0	8.3 8.7 315 20.0	8.3 8.5 296 20.0
D T 24:00	19.0	19.0	19.0	19.0	19.0	19.0
00:00	8.1 9.2 604 20.0	8.2 9.0 452 20.0	8.3 8.9 374 20.0	8.4 8.8 338 20.0	8.3 8.6 316 20.0	8.4 8.8 296 20.0
ш	pH 02 ppm Cond. Temp(C)					
TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 02900056

TOXICITY TEST REPORT

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MISA Daphnia

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900263

TOXICITY TEST REPORT

TEST CONDITIONS		5300050 sackaril a long 2	27000
Сощрапу	: Stelco Steel Hilton Works	n slagun andusc	207004
		TEST	ELAPSE
Region Industry	: West Central : Iron and Steel	5 % 5 %	00:00
Control point	: Northwest Outfall, (200)	000	0
73	BAR Grab P. Peidl	too ppm 02 ppm Cond. Temp(C)	9.0 756 19.5
Date Collected Received Tested	. 04/03/90 : 04/04/90 at: 1120	50 pH 02 ppm Cond.	8.9
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25 pH 02 ppm	2.80
Test Animal Weight(gm) Length(mm)	. D. magna	Cond. Temp(C)	414 19.5 8.4
MORTALITY DATA		02 ppm Cond. Temp(C)	8.8 360 19.5
TEST ELAPS CONC.	E D T I M E MORTALITY	6 pH 02 ppH	4.88
x 00:00 24:00 48:00	x x x x x x x x x x x x x x x x x x x	Temp(C)	19.5
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	Control pH 02 ppm Cond. Temp(C)	8.9 302 19.5
48 Hour LC50 :	Non-lethal		
95% fid. (imits :	× 0°0 - 0°0		
Comments	: Non-lethal		

8.3 732 19.5

19.0

D TIME 24:00 48:00 8.3 509 19.5

19.0

8.4 8.9 401 19.5

19.0

8.4 8.9 348 19.5

19.0

8.4 8.9 317 19.5

19.0

8.5 8.9 294 19.5

19.0

TOXICITY TEST PARAMETERS

Sample Number: 03900367
TEST E L A P S E D T I M E CONC. 00:00 24:00 48:00

8.2 8.4 750 19.0	8.3 8.6 528 19.0	8.3 8.6 418 19.0	8.3 361 19.0	8.3 8.8 334 19.0	8.8 305 19.0
20.5	20.5	20.5	20.5	20.5	20.5
8.0 8.7 755 19.0	8.1 8.7 523 19.0	8.1 8.7 413 19.0	8.1 8.7 358 19.0	8.2 8.7 327 19.0	8.3 8.9 299 19.0
pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control

Stelco Steel Hilton Hamilton, ONT (950006)	TEST CONDITIONS
# West Central Iron and Steel Iron and Steel Northwest Outfall, (2	
: Northwest Outfall, (2 : Grab : P. Peidl : 06/05/90 : 06/06/90 at: 1055 : 06/06/90 at: 1055 : STATIC (Daphnia magna Acute Test Protocol. OME, : D. magna : D. magna : D. magna : Non-lethal : Non-lethal	
BAR Grab 1	**
ATA E L A P S E D T I M E 1.00 24:00 48:00 0	: BAR : Grab : P. Peidl : 06/05/90 : 06/05/90 : 06/06/90 at:
### S E D T I M E E L A P S E D T I M E 1:00 24:00 48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	• •
E L A P S E D T I M E 00:00 24:00 48:00 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 our LC50 : Non-lethal	
ELAPSED TIME 00:00 24:00 48:00 0 0 0 0 0 0 0 0 rol 0 0 0 our LC50 : Non-lethal	IA
0 24:00 48:00 0 0 0 0 0 0 0 0 0 0 1 Non-lethal	LAPSED TIME MOR
0 0 0 0 0 0 0 0 0 0 : Non-lethal	00 24:00 48:00
: Non-lethal its : 0.0 - 0.0	00000
0.0 - 0.0	
	0.0 - 0.0 :
Comments : Non lethal	: Non lethal

TOXICITY TEST PARAMETERS

Sample: 03900440

TOXICITY TEST REPORT

			-					
	I M E	48:00	8.0 8.5 721 19.5	8.0 8.7 515 19.5	8.1 8.8 408 19.5	8.8 357 19.5	8.2 8.9 328 19.5	8.8 297 19.5
	1 0	24:00	19.5	19.5	19.5	19.5	19.5	19.5
3900440	LAPSE	00:00	8.1 9.0 700 20.5	8.2 9.1 496 20.5	8.3 9.1 394 20.5	8.3 9.1 344 20.5	8.3 9.1 316 20.5	8.3 9.1 296 20.5
Sample Number: 03900440	В		pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)				
Sample	TEST	***	100	50	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample Number: 03900556

ELAPSED TIME 00:00 24:00 48:00 TEST CONC.

7.9	8.1	8.2	8.2	8.2	8.3
8.0	8.2	8.3	8.3	8.3	8.4
649	480	388	345	322	304
20.0	20.0	20.0	20.0	20.0	20.0
20.0	20.0	20.0	20.0	20.02	20.0
7.9	8.1	8.3	8.3	8.3	8.5
9.0	9.0	9.0	9.0	9.0	9.2
652	475	386	345	321	297
21.0	21.0	21.0	21.0	21.0	21.0
pH	pH	pH	pH	pH	t pH
02 ppm	02 ppm	02 ppm	02 ppm	02 ppm	O2 ppm
Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	50	25	13	•	Control

MISA Daphnia

Stelco Steel Hamilton, ON (950006) West Central: Iron and Ste: Iron and Ste: Grab Iron and Steel Grab BAR Grab 1. Hibberd 08/14/90 08/14/90 1. Hibberd 08/15/90 1. Hibberd 08/15/90 1. Hibberd 08/15/90 1. Hibberd 1. Hibber	Stelco Steel Hilton Works Hamilton, ONT (950006) West Central	Iron and Steel Northwest Outfall, (200)	: 1230	nna Acute Lethality Toxicity ol. OME, 1988)		TOTAL	**	080080	× 0°0
						D T I	00:00 24:00 48:00	0-00-0	- 0°0

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900681

TOXICITY TEST REPORT

I M E	8.0 8.1 576 20.5	8.1 8.4 434 20.5	8.1 8.5 366 20.5	8.2 8.6 332 20.5	8.3 8.7 313 20.5	8.1 8.8 300 20.5
D T	20.5	20.5	20.5	20.5	20.5	20.5
LAPSED TIME 00:00 24:00 48:00	8.2 8.9 578 19.5	8.3 9.1 430 19.5	8.3 9.1 369 19.5	8.3 9.1 335 19.5	8.4 9.0 311 19.5	8.3 9.2 289 19.5
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample Number: 03890263

25.53	448°.	84 M	WWY.	£285	W C 3 4 10
8.3 9.7 295 19.	8.4 9.4 328 19.	8.3 9.4 338 19.	8.3 9.3 367	8.3 9.2 428 19.5	8.3 9.2 554 19.
19.0	19.0	19.0	19.0	19.0	19.0
20°0	20.0	20.0	20.0	20.0	20.0
7.9 8.9 303 20.0	8.0 8.8 312 20.0	8.0 9.0 334 20.0	8.0 9.1 366 20.0	8.0 9.0 432 20.0	7.9 9.0 557 20.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 Cond. Temp(C)	pH 02 Cond. Temp(C)	pH 02 Cond. Temp(C)	pH 02 Cond. Temp.(C)
Control	9	13	52	20	100

Company	: Stelco Steel Hilton Works Hamilton, ONT (950006)	
Region Industry	: West Central : Iron and Steel	
Control point	: North Outfall, (400)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 12/05/89 : 12/05/89 : 12/06/89 at: 1105	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
TEST ELAP	SED TIME TOTAL MORTALITY	
x 00:00 24:00 48:00	00 48:00	
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	× 0.0 - 0.0 :	
Comments	: Non-lethal	

TOXICITY TEST PARAMETERS

Sample: 03890320

TOXICITY TEST REPORT

	I M E	48:00	8.1 8.5 578 19.5	8.8 8.8 444 19.5	8.3 8.9 376 19.5	8.3 338 19.5	8.2 9.0 340 19.5	8.3 9.0 306 19.5
	D T	24:00	19.0	19.0	19.0	19.0	19.0	19.0
3890320	LAPSE	00:00	8.1 9.4 575 19.0	8.2 9.0 433 19.0	8.3 8.9 366 19.0	8.3 9.0 333 19.0	8.3 9.0 307 19.0	8.4 8.9 293 19.0
Number: 03890320	Ш		pH 02 ppm Cond. Temp(C)	of pH O2 ppm Cond. Temp(C)				
Sample	TEST	×	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.8 8.8 318 20.0 8.8 445 20.0 8.3 8.9 374 20.0 8.3 8.9 340 20.0 00:00 24:00 48:00 H ... 19.0 19.0 19.0 19.0 19.0 19.0 ۵ 8.5 8.9 369 20.0 8.4 8.9 337 20.0 8.6 9.1 442 20.0 8.7 9.2 593 20.0 ELAPSE Sample Number: 03900033 pH 02 ppm cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) (D)dua pH 02 ppm Cond. Control TEST CONC. 7 9 100 20 25

TEST CONDITIONS		
Company : Stelco Steel Hilton Works	Sample Number: 03900088	900008
		ELAPSE
Region : West Central Industry : Iron and Steel	**************************************	00:00
Control point : North Outfall, (400)		
Laboratory : BAR Sampling Method : Grab Sampled By : P. Peidl Date Collected : 02/06/20	100 pH 02 ppm Cond. Temp(C)	8.8 8.8 670 20.0
Received : 02/06/90 Tested : 02/07/90 at: 1055	50 pH OZ ppm Cond.	8.6 484
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25 pH O2 ppm	8 8 8 5 7 7
Test Animal : D. magna : Height(gm) :	Cond. Temp(C)	394
Length(mm) : Hongth(mm) : Hongth(mm)	13 pH 02 ppm 0.00d.	8.5
TEST ELAPSED TIME TOTAL CONC.	(2) dua 9	8.5
x 00:00 24:00 48:00 x	Cond. Temp(C)	322
100 0 0 1 16 25	Control pH 02 ppm Cond. Temp(C)	8.7 300 20.0
48 Hour LC50 : >100%		
95% fid. limits : 0.0 - 0.0 %		
Comments : LC50 >100		

20.02

8.5 394 20.0 8.5 349 20.0

20.02

20.0

20.0

20.02

ELAPSED TIME

SLOPE of Mortality Curve : LC50 Calculated By :

00:00 24:00 48:00

20.02

8.8 670 20.0 8.6 8.6 484 484

TOXICITY TEST PARAMETERS

I M E 48:00	8.2 8.2 729 20.0	8.3 8.3 516 20.0	8.3 8.4 510 20.0	8.4 8.4 360 20.0	8.4 8.5 326 20.0	8.4 8.4 300 20.0
D T I M E 24:00 48:00	19.5	19.5	19.5	19.5	19.5	19.5
00:00	8.2 9.2 722 19.5	8.4 9.0 513 19.5	8.4 8.7 407 19.5	8.5 8.7 358 19.5	8.5 329 19.5	8.6 8.9 298 19.5
a 1	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH O2 ppm Cond. Temp(C)
CONC.	100	20	25	13	9	Control

MISA Daphnia			SLOPE of Mortality Curve LC50 Calculated By :	Curve :	
	TOXICITY TEST REPORT	Sample: 02900058	TOXICITY TEST PARAMETERS	METERS	
TEST_CONDITIONS Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	60	Sample Number: 02900058 TEST E L A P S CONC. 7	02900058 E L A P S E D T I M E 00:00 00:30 01:00 02:00 24:00 48:00	48:00
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	: North Outfall, (400) : MOE : Grab : Mark Smithson : 03/28/90 : 03/29/90 : 03/30/90 at: 1300		100 pH 0.2 ppm 0.3 ppm	8.1 10.3 640 20.0 20.0 8.1 9.5 505	20.02 20.02 20.02 20.03 20.03
Type of Bioassay Test Animal Weight(gm) Length(mm)	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna :	sality Toxicity	30 pH 02 ppm cond. 15 pH 02 ppm 15 pH 02 ppm cond.		
MORTALITY DATA TEST E L A P CONC. \$\times 00:00 00:3	DATA ELAPSED TIME 00:00 00:30 01:00 02:00 24:00 48:00	TOTAL MORTALITY	Temp(C) 5 pH 02 ppm Cond. Temp(C)	20.0 20.0 7.9 9.1 330 20.0	
700 0 0 0 30 0 0 0 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 12 12 12 12 12 12 12 12 12 12 12 12 12	100 100 100 100 0 0	Control pH 02 ppm Cond. Temp(C)	7.9 9.0 310 20.0	8.0 315 20.0
48 Hour LC50 95% fid. limits Comments	: 5.0 - 15.0 : 0.0 - 0.0 % : MiSA Audit	34			

8.4 398 19.5

19.0

8.3 8.6 708 19.5

19.0

TIME

8.4 8.9 504 19.5

19.0

8.4 8.9 348 19.5

19.0

8.4 8.9 316 19.5

19.0

8.4 8.9 293 19.5

19.0

695

TEST CONDITIONS						
Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	ilton Works		Sample TEST CONC.	Sample Number: 03900348 TEST E L A P S CONC. % 00:0	348 P S E
Control point Laboratory Sampling Method Sampled By	: North Outfall, (400) : BAR : Grab : D. Johnston : D. Johnston	(400)		100	pH O2 ppm Cond. Temp(C)	8.2 9.2 755 20.0
Received Tested	: 05/01/90 : 05/02/90 at:	1200		20	pH 02 ppm Cond. Temp(C)	8.2 9.1 531 20.0
		Acute Letha OME, 1988)	lity Toxicity	25	pH 02 ppm Cond.	8.3 9.1 416
Veight(gm)	addus			13	Temp(C) PH O2 ppm Cond.	20.0 8.3 9.0 361
LITY DATA	6		0 0	,	Temp(C)	20.0
CONC.	S E D I M E		MORTALITY %	9	pH O2 ppm Cond. Temp(C)	8.3 9.0 327 20.0
100 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000		00000	Control		8.4 9.0 299 20.0
48 Hour LC50 95% fid. limits	: Non-lethal	ж				
Comments	: Non-lethal					

88.57.00 0.

20.0

20.0

20.02

20.0

LAPSED TIME 00:00 24:00 48:00

SLOPE of Mortality Curve : LC50 Calculated By :

20.02

20.0

TEST CONDITIONS		
Company	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central	on Works
Control point	: North Outfall, (400)	(0)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 06/05/90 : 06/05/90 : 06/06/90 at: 1100	0
Type of Bioassay	: STATIC (Daphnia magna Acu Test Protocol. OM	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	. O. magna	
MORTALITY DATA		
CONC.	SED TIME	TOTAL
x 00:00 24:00 48:00	00 48:00	**
100 0 1 50 0 0 25 0 0 0 13 0 0 0 6 0 0 0	-00000	80000
48 Hour LC50	: >100%	
95% fid. limits	0.0 - 0.0 :	*
Comments	: LC50 > 100	

TOXICITY TEST PARAMETERS

1 M E	7.9 8.5 719 19.5	8.0 8.7 15.13 19.5	8.1 8.8 407 19.5	8.1 8.8 357 19.5	8.2 8.8 327 19.5	8.1 8.8 302 19.5
PSED TIME 00:00 24:00 48:00	19.5	19.5	19.5	19.5	19.5	19.5
00:00	8.1 7.18 20.5	8.3 9.2 512 20.5	8.3 9.1 404 20.5	8.3 9.1 353 20.5	8.3 9.1 326 20.5	8.3 9.1 296 20.5
ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	L pH O2 ppm Cond. Temp(C)
TEST CONC.	100	90	25	13	9	Control

TOXICITY TEST REPORT Sample: 03900552	SNO	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	t : North Outfall, (400)	bod : 400 : 700 : P. Peidl ed : 07/03/90 d : 07/04/90 at: 1040	ssay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol, OME, 1988)	: D. magna	A	LAPSED TIME TOTAL MORTALITY	00:00 24:00 48:00	00000	: Non-lethal	
	TEST CONDITIONS	Company Region Industry	Control point	Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	a. ≪	x 00:00 24:00	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	48 Hour LC50	48 Hour LC50 95% fid. limits

TOXICITY TEST PARAMETERS

1 M E	8.0 8.3 660 19.5	8.5 497 19.5	8.2 8.5 391 19.5	8.2 8.6 347 19.5	8.2 8.6 320 19.5	8.3 300 19.5
D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
L A P S E 00:00	8.1 9.2 659 20.0	8.3 9.2 482 20.0	8.3 9.2 393 20.0	8.4 9.2 349 20.0	8.4 9.2 323 20.0	8.5 9.2 297 20.0
ш	pH 02 ppm cond. Temp(C)	t pH 02 ppm cond. Temp(C)				
TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.0 8.5 602 21.0	8.1 8.6 449 21.0	8.6 376 21.0	8.2 8.6 340 21.0	8.1 8.6 319 21.0	8.2 8.7 295 21.0
20.5	20.5	20.5	20.5	20.5	20.5
8.2 9.2 586 19.5	8.2 9.3 440 19.5	8.2 9.3 371 19.5	8.2 335 19.5	8.1 9.4 308 19.5	8.2 9.4 291 19.5
pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)
100	20	25	13	%	Control

MISA Daphnia

TEST CONDITIONS		
Industry	: Iron and Steel	
Control point	: East Side Filter, (601)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab P. Peidt 12/05/89 12/06/89 at: 1045	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	xicity
Test Animal Weight(gm)	D. magna	
MORTALITY DATA		
CONC.	E D T I M E TOTAL MORTALITY	AL .ITY
x 00:00 24:00	48:00	æ
100 0 1 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-00000	80000
48 Hour LC50 :	>100%	
95% fid. limits :		
Comments :	LC50 >100%	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	I M E	8.0 8.8 608 7.5	8.2 9.0 438 19.5	8.2 9.3 375 19.5	8.3 9.8 339 19.5	8.3 9.9 318 19.5	8.2 10.3 301 19.5
		19.0	19.0	19.0	19.0	19.0	19.0
890323	A P S E 00:00	7.6 8.5 600 19.0	8.0 8.7 446 19.0	8.2 8.8 373 19.0	8.3 335 19.0	8.3 310 19.0	8.4 8.9 293 19.0
Sample Number: 03890323	A L	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)				
Sample	TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.0	8.2	8.2	8.3	8.2	8.2
8.6	8.6	8.6	9.0	9.0	8.9
605	450	376	339	307	299
19.5	19.5	19.5	19.5	19.5	19.5
19.0	19.0	19.0	19.0	19.0	19.0
7.7	8.1	8.2	8.3	8.3	8.4
8.7	8.7	8.7	8.7	8.8	8.9
593	447	367	333	316	293
19.0	19.0	19.0	19.0	19.0	19.0
pH	pH	pH	pH	pH	L pH
02 ppm	02 ppm	O2 ppm	02 ppm	02 ppm	O2 ppm
Cond.	cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	25	13	•0	

TEST CONDITIONS	
Сопрапу	: Stelco Steel Hilton Works Hamilton, ONT
Region Industry	: West Central : Iron and Steel
Control point	: East Side Filter, (601)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 01/16/90 : 01/16/90 : 01/18/90 at: 1730
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	: D. magna
MORTALITY DATA	
TEST E L A P	SED TIME TOTAL MORTALITY
x 00:00 24:00 48:00	00 48:00
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
48 Hour LC50	: >100%
95% fid. limits	% 0°0 - 0°0 :
Common	: LC50 >100

TOXICITY TEST PARAMETERS

Sample: 03900027

TOXICITY TEST REPORT

	1 M E	7.9 8.5 644 20.0	8.6 471 20.0	8.2 8.7 382 20.0	8.3 8.7 340 20.0	8.8 315 20.0	8.3 8.4 293 20.0
	D T	20.0	20.0	20.0	20.0	20.0	20.0
3900027	00:00	7.6 8.0 653 20.5	7.9 8.4 477 20.5	8.1 8.6 385 20.5	8.2 8.6 341 20.5	8.2 3.7 20.5	8.3 8.8 297 20.5
Sample Number: 03900027	ш	pH 02 ppm cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
Sample	TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

TIME

ELAPSED

48:00	8.6 643 20.0	8.1 8.6 20.0	8.2 8.6 379 20.0	8.3 8.6 337 20.0	8.3 8.5 314 20.0	8.3 8.5 293 20.0
54:00	20.0	20.0	20.0	20.0	20.0	20.0
00:00 24:00 48:00	7.9 8.9 652 20.5	8.0 8.8 473 20.5	8.1 8.7 384 20.5	8.2 8.8 342 20.5	8.2 8.8 316 20.5	8.3 8.8 297 20.5
	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)
»e	100	20	25	13	٥	Control

	TOXICITY TEST REPORT Sample: 03900086	TOXICI	TOXICITY TEST PARAMETERS	METERS	
TEST CONDITIONS Company Region	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	Sample TEST CONC.	Number:	03900086 ELAPSED TIME 00:00 24:00 48:00	7 L
Control point Laboratory Sampled By Sampled By		100	pH 02 ppm Cond. Temp(C)	7.8 8.0 715 20.0	20.0
Received Tested Type of Bioassav	: 02/06/90 : 02/07/90 at: 940 : STATIC		pH 02 ppm Cond. Temp(C)	8.1 8.2 510 20.0	20.0
Test Animal		25	pH 02 ppm Cond. Temp(C)	8.3 8.3 405 20.0	20.0
Length(mm) MORTALITY DATA		13	pH 02 ppm Cond. Temp(C)	8.4 8.3 356 20.0	20.0
TEST E L A P S CONC. X 00:00 24:00	SED TIME TOTAL MORTALITY 0 48:00 %	9	pH O2 ppm Cond. Temp(C)	8.4 8.4 326 20.0	20.0
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000800	Control	t pH O2 ppm Cond. Temp(C)	8.5 300 20.0	20.0
48 Hour LC50 95% fid. limits	: >100% : 0.0 - 0.0 %				

TOXICITY TEST PARAMETERS

8.2 8.5 507 20.0 8.3 8.6 402 20.0 8.4 8.6 353 20.0 8.4 8.6 326 20.0 8.4 8.6 301 20.0 TIME 00:00 24:00 48:00 20.0 20.0 20.0 20.0 20.0 ELAPSED 8.2 8.4 505 20.0 8.3 8.4 402 20.0 8.4 8.4 353 20.0 8.4 8.4 323 20.0 8.5 8.7 300 20.0 pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C)

20.0

LEST CONDITIONS	
Company	: Stelco Steel Hilton Works Hamilton, ONT (950006) Uset Featral
Industry	: Iron and Steel
Control point	: #1 60 inch Sewer, (602)
Laboratory Sampling Method Sampled By Date Collected Received	BAR Grab P. Peidl 11/14/89 11/14/89 11/18/89 at: 1600
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
	. D. magna
MORTALITY DATA	
TEST ELAPS CONC.	SED TIME TOTAL MORTALITY
x 00:00 04:00	00:00 04:00 24:00 48:00
Control 0 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50	: >100%
95% fid. limits	× 0.0 - 0.0 :
Comments	: LC50 >100%

TOXICITY TEST PARAMETERS

Sample: 03890268

TOXICITY TEST REPORT

	48:00	8.3 9.7 295 20.0	8.3 9.3 323 20.0	8.3 9.2 341 20.0	8.2 9.1 378 20.0	8.1 9.0 453 20.0	7.8 8.8 601 20.0
	I M E 24:00 48:00	19.0	19.0	19.0	19.0	19.0	19.0
	D T 00:00	20.0	20.0	20.0	20.0	20.0	20.0
03890268	00:00	7.9 8.9 303 20.0	8.1 9.0 333 20.0	8.1 9.0 354 20.0	7.9 8.9 392 20.0	7.6 9.1 472 20.0	7.0 9.2 627 20.0
Sample Number: 0	ш	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	Control	•	13	25	20	100

MISA Daphnia		SLOPE o LC50 Ca	SLOPE of Mortality Curve LC50 Calculated By :	: anno:	Geometric Mean	ric M	Lean
	TOXICITY TEST REPORT Sample: 03890318	TOXICIT	TOXICITY TEST PARAMETERS	ETERS			
TEST CONDITIONS Company Region Industry		Sample TEST CONC.	Number: 03890318 E L A P S	00:00 04:00 24:00 48:00	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	T I M E 0 24:00	00:87
Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	#1 60 inch Sewer, (602) BAR Grab P. Peidl 12/05/89 12/05/89 12/06/89 at: 1025	100	pH OZ ppm Cond. Temp(C) pH OZ ppm Cond.	3.9 710 19.0 7.1 8.9 485	19.5	4.0 9.3 677 19.0	7.6 8.8 497
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna	25	Temp(C) pH 02 ppm Cond. Temp(C)	19.0 7.6 8.8 394 19.0	19.5	19.0	19.5 7.9 9.0 389 19.5
Werght(mm) Length(mm) MORTALITY DATA		13	pH 02 ppm Cond. Temp(C)	7.9 8.8 350 19.0	19.5	19.0	8.1 9.2 352 19.5
TEST E L A P S CONC. \$ 00:00 04:00	SED TIME TOTAL MORTALITY %	9	pH 02 ppm Cond. Temp(C)	8.2 8.7 320 19.0	19.5	19.0	8.2 9.3 324 19.5
100 0 11 50 0 0 25 0 0 0 6 0 0 Control 0 0 48 Hour LC50 95% fid. Limits Comments	12 12 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	DH O2 ppm Cond.	4.0.0 0.00 0.00	19.5	19.0	9.2 9.4 5.5 5.5

TOXICITY TEST REPORT Sample: 03900067	: Stelco Steel Hilto Hamilton, ONT (950006) : West Central : Iron and Steel	obint : #1 60 inch Sewer, (602) 'Y : BAR Wethod : Grab 3y : P. Peidl sected : 01/24/90 iived : 01/25/90 at: 1055	<pre>Sign stars</pre>	APSED TIME TOTAL MORTALITY	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LC50 : >100%
TEST CONDITIONS	Company Region	Control point Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay Test Animal Weight(gm) Length(mm)		o o o o o o o o o o o o o o o o o o o	48 Hour LC50

TOXICITY TEST PARAMETERS

	1 M E	6.8 8.2 699 20.0	7.8 8.2 502 20.0	8.2 8.3 403 20.0	8.3 8.3 354 20.0	8.4 8.4 327 20.0	8.4 8.4 299 20.0
	D T 1 M E 24:00 48:00	20.0	20.0	20.0	20.0	20.0	20.0
290006	A P S E	6.0 8.9 709 20.0	7.1 8.8 504 20.0	7.6 8.7 404 20.0	8.0 8.7 355 20.0	8.3 8.7 325 20.0	8.5 8.7 299 20.0
Sample Number: 03900067	E L	pH 02 ppm Cond. Temp(C)					
Sample	TEST CONC.	100	20	25	13	9	Control

SLOPE of Mortality Curve : 3.8 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

	6.9 8.6 549 20.0	7.7 8.6 426 20.0	8.1 8.7 365 20.0	8.3 8.8 335 20.0	8.4 8.7 300 20.0
2.9 8.9 1178 20.0	20.0	20.0	20.0	20.0	20.0
3.0 8.8 1185 20.0	6.6 8.7 555 20.0	7.2 8.6 428 20.0	7.7 8.5 365 20.0	8.0 8.6 333 20.0	8.5 300 20.0
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
100	20	25	13	9	Control

MISA Daphnia

(01	TOXICITY TEST REPORT Sample: 03900176
TEST CONDITIONS Company HE (9) Region Well	Steico Steel Hilton Works Hamilton, ONT (950006) West Central Iron and Steel
Control point : #1	#1 60 inch Sewer, (602)
Laboratory : BAR Sampling Method : Grai Sampled By : P.P. Date Collected : 03/1 Received : 03/1 Tested : 03/1	BAR Grab P.Peidl 03/06/90 03/08/90 at: 1015
Type of Bioassay : ST (D	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal : D. Weight(gm) :	magna
MORTALITY DATA	
CONC.	TIME TOTAL HORTALITY
x 00:00 24:00 48:00	× 00
100 0 12 12 50 0 13 4 50 0 13 4 50 0 0 1 13 6 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100 33 88 88 80
48 Hour LC50 : 5	56.1 x
95% fid. limits 1 4	44.0 - 71.3 %
Comments : Le	Lethal

SLOPE of Mortality Curve : LC50 Calculated By : Trimmed Spearman-Karber

TOXICITY TEST PARAMETERS

	7.1	7.8	8.1	8.3	8.4
	8.7	8.7	8.7	8.8	8.9
	587	446	377	336	298
	20.0	20.0	20.0	20.0	20.0
2.8 8.7 1398 19.5	19.5	19.5	19.5	19.5	19.5
2.8	6.3	7.0	7.5	7.9	8.5
9.0	9.0	9.0	8.9	8.9	8.9
1428	580	442	374	337	300
19.5	19.5	19.5	19.5	19.5	19.5
pH	pH	pH	pH	pH	L pH
02 ppm	02 ppm	02 ppm	02 ppm	02 ppm	02 ppm
Cond.	Cond.	Cond.	cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	25	13	•	Control

TOXICITY TEST PARAMETERS

Sample: 02900050

MISA Daphnia

TEST CONDITIONS	
Company	: Stelco Steel Hilton Works Hamilton, ONT
Region	(950006) : West Central : Iron and Steel
Control point	: #1 60 inch Sewer, (602)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab P. Peidl 04/03/90 04/04/90 at: 1235
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	. D. magna
MORTALITY DATA	
TEST E L A P S CONC.	ED TIME HORTALITY
x 00:00 24:00 48:00	X 48:00
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20000
48 Hour LC50 :	>100%
95% fid. limits :	× 0.0 - 0.0
Comments	: LC50 >100

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900268

	M	48:00	6.8 8.5 771 19.5	7.8 8.5 531 19.5	8.1 8.7 410 19.5	8.3 8.7 354 19.5	8.3 8.6 319 19.5	8.4 8.9 292 19.5
	1 0	24:00	19.0	19.0	19.0	19.0	19.0	19.0
3900268	LAPSE	00:00	6.6 9.2 809 19.5	7.3 8.8 553 19.5	7.7 8.8 427 19.5	8.1 8.8 369 19.5	8.2 8.8 336 19.5	8.4 8.9 302 19.5
Number: 03900268	ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	1 pH 02 ppm Cond. Temp(C)
Sample	TEST	*	100	20	25	13	•	Control

TEST CONC. 26

SLOPE of Mortality Curve : LC50 Calculated By :

E	48:00	7.0 9.2 811 19.5	7.1 8.8 557 19.5	7.7 9.0 432 19.5	8.1 8.9 369 19.5	8.2 9.0 333 19.5	8.3 9.2 301 19.5
1	7 00 7	20.0	20.0	20.0	20.0	20.0	20.0
APSED	00:00 24:00	6.6 9.0 808 20.5	7.4 9.0 556 20.5	7.7 8.9 432 20.5	8.0 8.9 370 20.5	8.2 8.9 334 20.5	8.4 9.0 299 20.5
ELAPS		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
TEST	CONC.	100	20	25	13	9	Control

	H E	48:00	7.9 8.5 19.5	8.8 512 19.5	8.1 8.8 405 19.5	8.1 8.9 355 19.5	8.1 8.9 325 19.5	8.1 8.9 297 19.5
	D T	24:00	20.0	20.0	20.0	20.0	20.0	20°0
3900442	LAPSE	00:00	8.0 9.0 723 20.5	8.2 9.1 516 20.5	8.2 9.1 407 20.5	8.3 9.1 355 20.5	8.3 9.1 328 20.5	8.3 9.1 296 20.5
Sample Number: 03900442	ш		pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)
Sample	TEST	*	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.2 392 19.5 8.3 347 19.5 8.0 8.3 663 19.5 8.5 483 19.5 8.3 321 19.5 8.8 297 19.5 TIME 00:00 24:00 48:00 20.0 20.0 20.0 20.0 20.02 ELAPSED 8.1 9.2 20.0 20.0 8.3 486 20.0 8.3 9.2 394 20.0 8.4 9.2 349 20.0 8.4 9.2 320 20.0 8.5 9.2 297 20.0 Sample Number: 03900551 pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) Control TEST CONC. 100 50 25 5 9

20.0

	Stelco Steel Hilton Works Hamilton, ONT (95000b) West Central
ol point :: atory ing Method :: ed By Collected ::	Iron and Steel
ing Method sed By	#1 60 inch Sewer, (602)
	BAR Grab T. Hibberd 08/14/90 08/15/90 at: 1515
Type of Bioassay : STATIC (Daphn Test P	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal : D. magna Weight(gm) : Length(mm) :	agna
MORTALITY DATA	
CONC.	T I M E TOTAL MORTALITY
x 00:00 24:00 48:00	×
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50 : Non-	Non-lethal
(imits	× 0.0 ×
Comments : Non-lethal	ethal

	I M E	48:00	8.0 8.2 601 21.0	8.1 8.4 450 21.0	8.1 8.5 376 21.0	8.2 8.6 340 21.0	8.2 8.6 320 21.0	8.1 8.8 296 21.0
	1 0	24:00	20.5	20.5	20.5	20.5	20.5	20.5
03900683	LAPSE	00:00	8.0 5.05 7.05 7.05	8.2 9.2 443 19.5	8.2 9.2 373 19.5	8.1 9.2 336 19.5	8.2 9.3 305 19.5	8.3 99.4 19.5
Sample Number: C	ш		pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
Sample	TEST	**	100	20	52	13	9	Control

TEST CONDITIONS			
Company Region Industry	N T ~ 3 -	Stelco Steel Hilton Works Hamilton, ONT (950006) West Central Iron and Steel	
Control point		M M	
Laboratory Samping Method Sampled By Date Collected Received Tested	m	BAR Grab P. Peidl 11/14/89 11/18/89 at: 1600	
Type of Bioassay	S	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	Toxicity
Test Animal Weight(gm) Length(mm)	۵	D. magna	
MORTALITY DATA			
CONC.	S	DIIME	TOTAL MORTALITY
× 00:00 04	00	24:00 48:00	34
Control 0 6 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000	00000	ဝဝ၃ႜႜႜႜ
48 Hour LC50		>100%	
95% fid. limits	**	2 0.0 - 0.0	
Comments	•	LC50 >100%	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03890266

8.2 8.9 343 20.0 8.3 9.6 301 20.0 8.3 9.1 303 20.0 8.3 9.0 307 20.0 8.3 9.0 313 20.0 8.3 8.9 325 20.0 00:00 04:00 24:00 48:00 ELAPSED TIME 19.0 19.0 19.0 19.0 19.0 19.0 20.0 20.0 20.0 20.02 20.02 20.0 8.0 8.9 301 20.0 8.0 8.9 307 20.0 8.0 3.0 20.0 7.9 8.9 303 20.0 8.0 9.3 326 20.0 8.1 9.8 355 20.0 pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C) pH G2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) Control TEST CONC. 100 13 20 25

TEST COMDITIONS Stelco Steel Hilton Works Company Stelco Steel Hilton Works Company (9500000) (950000) (950000		TOXICITY TEST REPORT	Sample: 03890321	TOXICIT
#2 Rod Hill, (1100) #8 #2 Rod Hill, (1100) #8 #2 Rod Hill, (1100) #12 12 105 / 89 #12 12 105 / 89 #12 12 12 12 / 89 #12 12 12 / 89 #12 12 12 / 89 #13 12 12 12 / 89 #13 12 12 12 12 12 12 12 12 12 12 12 12 12	IEST CONDITIONS Company Region Industry	_	ks	Semple TEST CONC.
### BAR/Road Grab	Control point			
### STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) #### #### TOTAL HORTALITY ###################################	Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR/Road Grab P. Peidl 12/05/89 12/05/89		100
### ##################################	Type of Bioassay	STATIC (Daphnia magna Acute Test Protocol. OME,	thality Toxicity 88)	25
ELAPSED TIME FOTAL TOTAL MORTALITY X 00:00 24:00 48:00	Test Animal Weight(gm) Length(mm)			13
ELAPSED TIME FOTAL 00:00 24:00 48:00	MORTALITY DATA			
4:00 48:00	ш ;	x		9
: 84.6 % : 59.3 - 120.5	00:00	0 48:00 3 3 0 0 0	× 52 55 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control
	48 Hour LC50 95% fid. limits	84.6 % 59.3 - 120.5		

of Mortality Curve : 3.2 Calculated By : Probit

TY TEST PARAMETERS

	I M E	48:00	8.1 9.3 343 19.5	8.2 9.3 321 19.5	8.2 9.4 311 19.5	8.2 9.5 311 19.5	8.2 9.3 305 19.5	8.3 8.8 282 19.5
	D T	24:00	19.0	19.0	19.0	19.0	19.0	19.0
03890321	LAPSE	00:00	7.9 9.6 345 19.0	8.1 9.1 325 19.0	8.3 9.0 306 19.0	8.3 8.9 300 19.0	8.4 8.9 297 19.0	8.4 8.9 293 19.0
Number:	ш		pH 02 ppm cond. Temp(C)	L pH 02 ppm cond. Temp(C)				
Sample	TEST CONC.	×	100	20	25	13	9	Control

SLOPE of Mortality Curve : 9.0 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

8.1 8.9 343 19.0	8.8 317 19.0	8.3 8.7 305 19.0	8.5 8.6 299 19.0	8.3 8.6 296 19.0	8.3 8.4 289 19.0
19.0	19.0	19.0	19.0	19.0	19.0
8.0 10.5 345 20.5	8.1 9.5 320 20.5	8.2 9.0 308 20.5	8.3 8.9 302 20.5	8.8 300 20.5	8.8 8.8 207 20.5
pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH OZ ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	DH OZ ppm Cond. Temp(C)
100	20	25	13	9	Control

Stelco Steel Hilton Works Hamilton, ONI Hamilton, ONI Hamilton, ONI Hamilton, ONI Hamilton, ONI Hast Central Hast Central Iron and Steel Host Central Hast Central Hast Central Hast Central Hast Central Cognol Hast Central Hast	r conditions : ion	Works	
#2 Rod Mill, (1100) #8AR Grab			Sample TEST CONC.
### Grab Crab P-Peidl 02/06/90 02/06/90 02/06/90 02/06/90 102/06/90 102/06/90 102/07/90 at: 1000 102/07/90 at: 1000 103/07/90 at: 1000	P S E		
### STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) #### TOTAL HORTALITY ###################################	ATA E L A P S E E L A P S E 0 0 24:00 4		100
#ATA E L A P S E D T I M E MORTALITY 1:00 24:00 48:00 0 12 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ATA E L A P S E D T 1 M :00 24:00 48:00 0 12 12 0 8 8 0 0 1	e Lethality Toxicity , 1988)	25
APSED TIME FORTALITY 24:00 48:00 12 12 8 8 66 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	APSED TIM 24:00 48:00 12 12 8 8 9 1		13
ELAPSED TIME TOTAL MORTALITY	00:00 24:00 48:00 0 12 12 0 8 8		
00:00 24:00 48:00	00:00	TOTAL	9
100 0 12 12 0 0 1 0	0000	> e	
: 41.2 %	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 8 8 0 0	Contro
: 31.5 - 53.8	: 41.2		
	: 31.5 - 53.8		

OPE of Mortality Curve : 4.3 50 Calculated By : Probit

	H E	48:00		8.3 8.7 320 20.0	8.4 8.7 309 20.0	8.4 8.5 304 20.0	8.4 8.5 309 20.0	8.4 8.8 300 20.0
	1 0	24:00	8.2 8.8 344 20.0	20.0	20.0	20.0	20.0	20.0
3900089	LAPSE	00:00	8.0 8.8 339 20.0	8.8 319 20.0	8.4 8.8 309 20.0	8.5 8.7 306 20.0	8.5 304 20.0	8.5 8.7 300 20.0
Sample Number: 03900089	ш		pH 02 ppm Cond. Temp(C)	(pH 02 ppm Cond. Temp(C)				
Sample	TEST	% %	100	20	25	13	9	Control

MISA Daphnia		SLOPE C	SLOPE of Mortality Curve LC50 Calculated By :	: curve :	5.7 Probit		
	TOXICITY TEST REPORT Sample: 03900179	TOXICIT	TOXICITY TEST PARAMETERS	ETERS			
TEST CONDITIONS Company Region	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	Sample TEST CONC.	Sample Number: 03900179 TEST E L A P S CONC. 00:	03900179 LAPSED TIME 00:00 24:00 48:00	T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	I M E	
Control point Laboratory Sampling Method Sampled By Date Collected	: #2 Rod Mill, (1100) : BAR : Grab : P.Peidl : 03/06/90	100	pH 02 ppm Cond. Temp(C)	8.1 363 19.5	7.7 8.9 377 19.5		
Received Tested Two of Ricassav		20	pH O2 ppm Cond. Temp(C)	8.2 8.9 330 19.5	19.5	8.3 333 20.0	
Test Animal	(Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) D. magna	25	DH O2 ppm Cond. Temp(C)	8.4 9.0 314	19.5	8.8 317 20.0	
Weight(gm) Length(mm) MORTALITY DATA	** **	13	pH O2 ppm Cond. Temp(C)	8.4 8.9 307 19.5	19.5	8.4 8.9 309 20.0	
TEST E L A P S E CONC. \$ 00:00 24:00 48	SED TIME TOTAL MORTALITY X A SECO	•	pH 02 ppm Cond. Temp(C)	8.8 303 19.5	19.5	8.4 8.9 306 20.0	
100 0 12 50 0 2 25 0 0 13 0 0 6 0 0	12 3 1 1 0 0 0 1 1 8 8	Control	pH 02 ppm Cond. Temp(C)	8.5 8.9 300 19.5	19.5	8.8 8.8 296 20.0	
48 Hour LC50 95% fid. limits Comments	: 54.4 % : 42.0 - 70.6 % : Lethal						

TEST CONDITIONS: Stelco St Hamilton, (950006) Region: West Cent Industry: Iron and Control point: #2 Rod Mi Laboratory: MOE Sampling Method: Grab Sampled By: 17 Roch Date Collected: 03/27/90 Tested: 03/30/90 Tested: (Daphnia	ONT Cal Steel (1, (" at: at:	ilton Works 1100) 1100 Acute Lethality Toxicity OME, 1988)	>
point ory general sted sted sted sted	Co Steel Hill Lton, ONT D066) Central and Steel od Mill, (110 7/90 7/90 7/90 7/90 7/90 7/90 7/90 7/9	on Works 00 ute Lethality Toxicit	>
. West . Point : #2 . ory : MOE . Method : Gra . I By : Tra . I By : Gra . I Ca . Sted : 03/ . Sted : 03/ . Sted : 03/ . Sted : 03/	Steel Il, (at: magna ocol.	ω	>
atory : #2 ing Method : Gra ed By : Ira Collected : 03/ Received : 03/ Tested : 03/ of Bioassay : STA	at:	e .	>
atory ing Method ed By Collected Received Tested of Bioassay	at: magna ocol.	00 ute Lethality Toxicit	>
Bioassay :		ute Lethality Toxicit ME, 1988)	>
lest	agna		
Test Animal : D. me Weight(gm) : Length(mm) :			
MORTALITY DATA			
CONC.	T I M E	TOTAL MORTALITY	
x 00:00 01:00 02:00	04:00 24:00	48:00	×
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	00000	00000
48 Hour LC50 : Non-	Non-lethal		
95% fid. limits : 0.0	0.0 - 0	×	
Comments : Many	Many floaters at	60% and 100%.	

	T I M E						
000055	APSED T	7.6 10.6 318 20.0	7.7 9.8 319 20.0	7.8 9.4 318 20.0	7.8 9.2 318 20.0	7.8 9.1 319 20.0	7.8 9.1 316 20.0
Sample Number: 02900055	m T	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	09	30	15	ľ	Control

TOXICITY TEST PARAMETERS

8.4 9.0 317 19.5 8.4 8.9 305 19.5 8.4 299 299 19.5 8.4 8.9 297 19.5 8.3 9.1 342 19.5 TIME 00:00 24:00 48:00 19.0 19.0 19.0 19.0 19.0 ELAPSED 8.4 8.9 302 19.5 8.1 9.8 352 19.5 8.3 328 19.5 8.9 318 19.5 8.4 8.9 311 19.5 8.8 3.0 5.0 5.5 Sample Number: 03900269 pH O2 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) pH 02 ppm Cond. Control TEST CONC. 9 13 100 50 25

19.0

Temp(C)

** ** ** **	Stelco Steel Hilton Works Hamilton, ONT	
** ** **	(950006) West Central Iron and Steel	
** **	#2 Rod Hill, (1100)	
** ** ** **	BAR Grab D. Johnston 05/01/90 05/02/90 at: 1040	
Type of Bioassay : STATIC (Daphn Test P	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal : D. m Weight(gm) : Length(mm) :	D. magna	
MORTALITY DATA		
CONC.	T I M E TOTAL MORTALITY	
x 00:00 24:00 48:00	×	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	
48 Hour LC50 : Non	Non-lethal	
95% fid. limits : 0.0	% 0°0 - 0°	
Comments : Non-	: Non-lethal	

	1 M E	8.2 8.9 366 19.5	8.2 8.8 334 19.5	8.3 316 19.5	8.3 8.9 307 19.5	8.3 8.8 304 19.5	8.8 302 19.5
		20.0	20.0	20.0	20.0	20.0	20.0
3900343	LAPSED T 00:00 24:00	8.0 368 20.5	8.2 9.1 336 20.5	8.2 9.0 318 20.5	8.4 9.0 311 20.5	8.4 9.0 306 20.5	8.4 9.0 299 20.5
Sample Number: 03900343	ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	52	5	9	Control

TOXICITY TEST PARAMETERS

Sample: 03900443

TOXICITY TEST REPORT

TEST CONDITIONS

TEST CONDITIONS		
Company		
Industry	: Iron and Steel	
Control point	: #2 Rod Mill, (1100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : P. Peidl : 07/03/90 : 07/04/90 at: 1020	
Type of Bioassay	: STATIC (Daphnia magna Acute Letha Test Protocol. OME, 1988)	Lethality Toxicity 1988)
Test Animal Weight(gm) Length(mm)	, D, magna	
MORTALITY DATA		
TEST E L A P	SED TIME	TOTAL MORTALITY
× 00:00 54:0	24:00 48:00	34
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000-	00000
48 Hour LC50	: Non-lethal	
95% fid. limits	: 0.0 - 0.0 :	
Commonte	· Mon lethal	

TOXICITY TEST PARAMETERS

Sample: 03900550

	I M E	8.1 8.6 354 19.5	8.2 8.7 327 19.5	8.2 3.13 19.5	8.2 8.7 307 19.5	8.3 8.7 304 19.5	8.3 299 19.5
	D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
03900550	L A P S E 00:00	8.0 9.2 353 20.0	8.3 9.2 328 20.0	8.4 9.2 313 20.0	8.4 9.2 308 20.0	8.4 9.2 300 20.0	8.4 9.2 297 20.0
Sample Number: 0	ш	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(c)	pH 02 ppm cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 03890267

TOXICITY TEST REPORT

03890267
Number: 03
Sample

	ш	00:87	8.3 9.7 295 20.0	8.4 9.7 316 20.0	8.3 9.9 343 20.0	8.3 9.8 376 20.0	8.2 9.5 451 20.0	8.1 9.1 595 20.0
	T I H	24:00 48:00	19.0	19.0	19.0	19.0	19.0	19.0
	0	04:00	20.0	20.0	20.0	20.0	20.0	20.0
03890267	A P S	00:00	7.9 8.9 303 20.0	8.1 8.9 316 20.0	8.1 8.9 336 20.0	8.0 9.0 369 20.0	7.9 9.0 444 20.0	7.8 9.1 592 20.0
Number: 038	E		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
a	TEST	***	Control	9	13	25	20	100

501

Works Works Lethality Toxicity 1988) TOTAL MORTALITY \$ 58 66 50 0 0	Sample: 038903 Stelco Steel Hilton Works		רכים בשונחושופם ב
Stelco Steel Hilton Works	Stelco Steel Hilton Works	TOXICITY TEST REPORT Sample: 03890322	TOXICITY TEST PAR
Stelco Steel Hilton Works Hamilton, ONT	Stelco Steel Hilton Works Hamilton, ONT (950006)		
Interest	int :: 20 inch Mill, (1200) sthod :: BAR	telco Steel Hilton Works	e Number:
thed : 20 inch Hill, (1200) ethod : BAR	int : 20 inch Mill, (1200) sthod : BAR	950006) est Central ron and Steel	TEST CONC.
### 1206 1908 1908 1908 1908 1908 1908 1909	ethod : BAR Grab Gr	0 inch Mill, (1200)	
12/05/89 at: 1210 12/05/89 12/06/89 at: 1210 13/06/89 at: 1210 13/06/89 at: 1210 13/06/89 at: 1210 13/06/89 13/06	### 12,05/89 at: 1210 #### 12,06/89 at: 1210 ##################################	AR rab Peidl 2.05/80	100 pH 02 ppm 02 ppm 10md,
STATIC Coaphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) 13 13 13 13 13 141A 1988 1	### STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) #### D. magna ##################################	at:	
### ### ##############################	: D. magna : : TOTAL E L A P S E D T I M E MORTALITY :00 24:00 48:00 0 0 7 0 0 7 0 0 8 0	TATIC Daphnia magna Acute Lethality Toxicity est Protocol. OME, 1988)	
### ### ##############################	#IAA E L A P S E D T I M E MORTALITY #300 24:00 48:00 0 0 7 0 0 0 0 0 0 0	• тадла	Cond. Temp(C)
E L A P S E D T I M E MORTALITY X 00:00 24:00 48:00	E L A P S E D T I M E HORTALITY 00:00 24:00 48:00 0 0 7 0 0 8 0 0 6 0 0 6 0 0 0 6 11.9 % Fid. Limits : 6.3 - 22.4 %		
4:00 48:00	4:00 48:00 0	E E	
0 7 58 Control 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	11.9 x 5 6.3 - 22.4 x		Cond. Temp(C)
: 11.9 % : 6.3 - 22.4	: 11.9 x : 6.3 - 22.4		
: 6.3 - 22.4	: 6.3 - 22.4		
		- 22.4	

8.2 19.5 19.5 8.3 8.3 19.5

8.3 8.9 19.0 19.0 19.0 19.0

19.0

19.0

tality Curve : ted By : Trimmed Spearman-Karber

PARAMETERS

	I M E	48:00	8.0 8.4 571	8.2 8.9 439 19.5	8.2 9.0 364 19.5	8.3 336 19.5
	1 0	24:00	19.0	19.0	19.0	19.0
3890322	LAPSE	00:00 54:00	7.7 9.5 565 19.0	7.9 9.1 457 19.0	8.2 8.9 369 19.0	8.3 8.9 335 19.0
Sample Number: 03890322	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST	2	100	50	25	13

TOXICITY TEST PARAMETERS

Sample: 03900029

Company : Stelco Steel Hilton Works Hamilton, ONI (950006) Region : West Central Industry : Iron and Steel Control point : 20 inch Mill, (1200) Laboratory : BAR Grab Sampling Method : Grab Grab Sampled : 02/06/90 Date Collected : 02/06/90		
: 20 inch Mill, : BAR : Grab : P. Peidl : 02/06/90 : 02/06/90	ton Works	
: Grab : Grab : P. Peidl : 02/06/90 : 02/06/90	(00)	
: 02/07/90 at:	1010	
Type of Bioassay : STATIC (Daphnia magna Acu Test Protocol. OM	Acute Lethality Toxicity OME, 1988)	
Test Animal : D. magna : Height(gm) :		
MORTALITY DATA		
CONC. ELAPSED TIME	TOTAL MORTALITY	
% 00:00 24:00 48:00	**	
100 0 0 1 25 0 0 0 1 13 0 0 0 6 Control 0 0 0	x x 0 0 0 0	
: >100%	4	
Comments : 0.0 · 0.0 . Comments : LC50 > 100	*	

SLOPE of Mortality Curve : LC50 Calculated By :

	1 M E	8.8 8.8 648 20.0	8.9 8.9 473 20.0	8.4 8.9 387 20.0	8.8 344 20.0	8.4 8.8 317 20.0	8.4 300 20.0
	D T	20.0	20.0	20.0	20.02	20.0	20.0
3900090	L A P S E 00:00	7.8 8.8 645 20.0	8.2 8.8 474 20.0	8.4 8.7 388 20.0	8.4 8.6 347 20.0	8.5 8.6 321 20.0	8.5 8.7 300 20.0
Number: 03900090	ш	pH 02 ppm cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
Sample	TEST CONC.	100	20	25	13	9	Control

SLOPE of Mortality Curve : 1.3 LC50 Calculated By : Probit

8.4 8.7 358 19.5

8.4 8.7 324 19.5

8.4 8.7 308 19.5

8.4 8.7 405 19.5

8.8 8.6 506 19.5

8.2 8.7 712 19.5

TOXICITY TEST REPORT Sample: 03900270	TOXICITY TEST	Y TEST
TEST CONDITIONS Company Stelco Steel Hilton Works	Sample	Number
>	TEST CONC.	
Control point : 20 inch Mill, (1200)	000	2
atory ing Method	2	02 pp Cond.
	20	pH 02 pp Cond. Temp(
Type of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	PH 025
Test Animal : D. magna : Height(gm) :	ŭ	Temp(
ATA	2	Cond.
TEST ELAPSED TIME TOTAL CONC.	9	PP - PP
x 00:00 24:00 48:00 x		Temp(
100 0 4 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	O2 pp Cond. Temp(
48 Hour LC50 : >100%		
95% fid. limits : 0.0 - 0.0 %		

SLOPE of Mortality Curve : LC50 Calculated By :

	ω Œ	48:00	8.3 9.0 699 19.5	8.4 8.9 498 19.5	8.4 8.9 392 19.5	8.4 8.9 345 19.5	8.8 3.15 19.5	8.5 8.9 294 19.5
		24:00 4	19.0	19.0	19.0	19.0	19.0	19.0
900270	APSE	00:00	8.1 9.5 720 20.0	8.3 9.1 518 20.0	8.4 8.9 411 20.0	8.4 8.9 360 20.0	8.4 8.8 328 20.0	8.4 8.9 302 20.0
Sample Number: 03900270	EL		pH 02 ppm cond. Temp(C)					
Sample	TEST CONC.	ж	100	20	52	13	9	Control

TOXICITY TEST PARAMETERS

Sample: 02900049

TOXICITY TEST REPORT

Sample Number: 02900049

TEST ELAPSED TIME

00:00 01:00 02:00 04:00 24:00 48:00

00 00	pH 02 ppm Cond. Temp(C)	8.1 9.9 6.24 20.0 8.0	8.0 8.2 584 20.0 7.9
0 00	Cond. Temp(C) PH O2 ppm Cond. Cond.	20.0 20.0 8.0 8.0 7.4 20.0 20.0	20.0 20.0 7.9 8.3 398 20.0
5	pH	7.9	7.9
	02 ppm	9.2	8.4
	cond.	360	358
	Temp(C)	20.0	20.0
12	pH	7.9	7.9
	02 ppm	9.1	8.4
	Cond.	333	330
	Temp(C)	20.0	20.0
ntrol	pH	7.8	7.9
	02 ppm	9.2	8.4
	cond.	315	312
	Temp(C)	20.0	20.0

LEST CONDITIONS		
Сопрапу	: Stelco Steel Hilton Works Hamilton, ONT (950006)	
Region Industry	: West Central : Iron and Steel	
Control point	: #2 60 inch Sewer, (1300)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab P. Peidl 04/03/90 04/04/90 at: 1155	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	. D. magna	
MORTALITY DATA		
TEST ELAPS CONC.	E D T I M E MORTALITY	
00:00 24:00 48:00	48:00	×
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	000000
48 Hour LC50	: Non-lethal	
95% fid. limits :	× 0°0 - 0°0	
Comments	: Non-lethal	

TOXICITY TEST PARAMETERS

Sample: 03900267

ME	48:00	8.3 8.7 656 19.5	8.3 8.9 474 19.5	8.4 9.0 383 19.5	8.4 9.0 339 19.5	8.4 9.0 313 19.5	8.5 9.0 294 19.5
D 1	24:00 48:00	19.0	19.0	19.0	19.0	19.0	19.0
LAPSE	00:00	8.5 9.2 682 7.9	8.4 8.9 497 19.5	8.4 8.9 402 19.5	8.8 355 19.5	8.8 329 19.5	8.4 8.9 302 19.5
ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST	**	100	20	25	13	9	Control

TEST CONDITIONS		o Coma S	Cample Number: 03000557	0557
Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central	TEST CONC.	E L A	E L A P S E 00:00
Control point				
Laboratory Sampling Method Sampled By	Grab	100	pH 02 ppm Cond. Temp(C)	8.9 8.9 630 21.0
Date Collected Received Tested	: 07/03/90 : 07/04/90 at: 1550	20	pH 02 ppm Cond. Temp(C)	8.2 9.0 472 21.0
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	DA PPM	9.0
Test Animal Weight(gm) Length(mm)	. D. magna	13	Temp(C)	8.3
MORTALITY DATA			Temp(C)	21.0
TEST ELAP	SED TIME TOTAL MORTALITY	9	DH OS PPM	9.12
x 00:00 24:00 48:00	0 48:00		Temp(C)	21.0
100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22 0 0 16 0 0 0 0 0 0 0	Control	1 pH 02 ppm Cond. Temp(C)	8.5 9.2 297 21.0
48 Hour LC50	: >100%			
95% fid. limits	× 0°00°0 :			
Comments	: LC50 > 100			

8.3 8.8 342 20.0

8.3 9.0 342 21.0

20.5

8.8 323 20.0

8.2 9.1 318 21.0

20.5

20.5

8.0 8.6 631 20.0

8.1 8.9 630 21.0 20.5

ELAPSED TIME

00:00 24:00 48:00

8.2 468 20.0

8.2 9.0 472 21.0 20.5

8.8 8.8 385 20.0

8.3 9.0 387 21.0

20.5

209

TEST CONDITIONS	
Company	Stelc Hamil (950
Industry	: West Central : Iron and Steel
Control point	: #2 60 inch Sewer, (1300)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : T. Hibberd : 08/14/90 : 08/15/90 at: 1530
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal Weight(gm) Length(mm)	: D. magna
MORTALITY DATA	
TEST E L A P	SED TIME TOTAL MORTALITY
x 00:00 24:00 48:00	20 48:00 %
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50	: Non-lethal
95% fid. limits	× 0.0 - 0.0 :
Comments	: Non-lethal

TOXICITY TEST PARAMETERS

Sample: 03900684

	1 M E 48:00	8.2 8.4 570 21.0	8.2 8.5 432 21.0	8.2 8.5 364 21.0	8.2 8.5 334 21.0	8.2 8.6 315 21.0	8.8 8.8 296 21.0
	D T 24:00	20.5	20.5	20.5	20.5	20.5	20.5
Sample Number: 03900684	L A P S E 00:00	8.9 8.8 561 20.5	8.6 8.9 424 20.5	8.5 9.0 360 20.5	8.4 9.0 330 20.5	8.4 9.0 313 20.5	8.3 9.1 294 20.5
	ш	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	52	13	v	Control

TOXICITY TEST PARAMETERS

Sample: 03890264

TOXICITY TEST REPORT

Sample Number: 03890264

TEST E L A P S E D T I M E CONC. x 00:00 04:00 24:00 48:00

8.3 9.6 301 20.0	8.4 3.18 20.0	8.3 9.2 336 20.0	8.3 9.0 375 20.0	8.3 8.9 447 20.0	8.2 8.8 588 20.0
19.0	19.0	19.0	19.0	19.0	19.0
20.0	20.0	20.0	20.0	20.0	20.0
7.9 8.9 303 20.0	8.2 9.0 314 20.0	8.1 9.0 342 20.0	8.1 9.2 371 20.0	7.9 9.1 445 20.0	7.8 9.1 595 20.0
pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Control	9	13	52	20	100

TOXICITY TEST PARAMETERS

Sample: 02900053

TEST CONDITIONS		Sample Number: 02900053	02900053	
Company Region Industry	: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel	TEST CONC.	E L A P S E D T I M E 00:00 01:00 02:00 04:00 24:00 48:00	
Control point	: East Side Filter Stage 1, (1900)		7	
Laboratory Sampling Method Sampled By		Cond.	680 669 669 669 669 669 669 669 669 669 66	
Date Collected Received Tested	: 03/26/90 : 03/29/90 at: 1200	60 pH 02 ppm Cond. Temp(C)	7.4 7.9 8.4 8.4 538 533 C) 20.0 20.0	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	30 pH 02 ppm Cond.	7.6 7.9 8.4 428 426	
Test Animal Weight(gm) Length(mm)	. D. magna :	15 pH 02 ppm Cond.	20.0 7.7 9.0 372	
MORTALITY DATA		Тетр(20.0	
⊢ ci	TOTAL MORTALITY	5 pH 02 ppm Cond.	7.8 7.9 8.4 8.4 333 334 50.0 50.0	
2 00:00 01:00	00:00 01:00 02:00 04:00 24:00 48:00		0.02	
100 0 0 60 0 0 30 0 0 15 0 0		Control pH 02 ppm Cond. Temp(C)	7.9 7.9 7.9 7.9 3.13 3.13 20.0	
48 Hour LC50	: >100%			
95% fid. limits	% 0°0 - 0°0 :			
Comments	: MISA Audit			

MISA Daphnia

SLOPE of Mortality Curve : LC50 Calculated By : TOXICITY TEST PARAMETERS Sample Number: 03900265 Control TEST CONC. 00000 Sample: 03900265 × : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) TOTAL MORTALITY East Side Filter Stage 1, (1900) Stelco Steel Hilton Works Hamilton, ONT (950006) West Central TOXICITY TEST REPORT at: 1220 ж 0.0 Non-lethal BAR Grab P. Peidl 04/03/90 04/03/90 : Non-lethal D. magna 0.0 ELAPSED 00:00 24:00 48:00 00000 00000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 48 Hour LC50 Test Animal Weight(gm) Length(mm) 20000 Region Industry Comments 100 50 25 13 6 Control Company TEST CONC.

8.2 7.3 19.5

7.9 8.3 783 19.5

pH 02 ppm Cond. Temp(C)

100

19.0

TIME

ELAPSED

00:00 24:00 48:00

8.3 8.9 525 19.5

8.2 8.6 544 19.5

20

19.0

(D)dwa pH 02 ppm Cond.

8.8 408 408

8.3 8.7 427 19.5

pH 02 ppm Cond. Temp(C)

25

19.0

8.4 8.9 317 19.5

8.8 334 19.5

pH 02 ppm Cond. Temp(C)

3.6

9

19.0

19.0

pH O2 ppm Cond. Temp(C)

8.8 352 19.5

8.8 368 19.5

pH 02 ppm Cond. Temp(C)

13

19.0

TOXICITY TEST PARAMETERS

Sample Number: 03900345

TEST E L A P S E D T 1 M E CONC. X 00:00 24:00 48:00

8.8 794 19.5	8.2 9.0 551 19.5	8.3 9.1 425 19.5	8.3 9.2 366 19.5	8.3 9.2 334 19.5	8.3 9.3 301 19.5
20.0	20.0	20.0	20.0	20.0	20.0
7.8 8.8 791 20.5	8.1 9.0 547 20.5	8.2 8.9 428 20.5	8.2 8.9 367 20.5	8.2 9.0 331 20.5	8.4 9.0 299 20.5
pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
100	20	25	13	•	Control

TOXICITY TEST REPORT Sample: 03900444	SNOT		: West Central : Iron and Steel	nt : East Side Filter Stage 1, (1900)	: BAR : Grab : P. Peidl : 06/05/90 : 06/05/90 : 06/06/90 at: 1320	ussay : STATIC (Daphnía magna Acute Lethality Toxicity Test Protocol. OME, 1988)	: D. magna :	ITA	LAPSED TIME TOTAL MORTALITY	00 24:00 48:00	00000	0 : Non-lethal		0.0
	TEST CONDITIONS	Company	keglon Industry	Control point	Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	∀	x 00:00 24:0	100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	48 Hour LC50	95% fid. limite	

	1 M E	7.8 8.4 758 19.5	8.0 8.7 532 19.5	8.8 8.8 418 19.5	8.2 8.9 362 19.5	8.2 9.0 327 19.5	8.2 8.9 298 19.5
	D T 24:00 4	20.0	20.0	20.0	20.0	20.0	20.0
Sample Number: 03900444	00:00	7.6 8.3 751 20.5	7.9 8.9 524 20.5	8.1 9.0 414 20.5	8.2 9.1 359 20.5	8.2 9.1 328 20.5	8.3 9.1 296 20.5
	m	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample Number: 03900554

TIME 00:00 24:00 48:00 ELAPSED TEST CONC.

7.8	8.0	8.1	8.2	8.2	8.3
8.0	8.2	8.3	8.4	8.5	8.6
704	508	405	354	325	296
20.0	20.0	20.0	20.0	20.0	20.0
20.0	20.0	20.0	20.0	20.0	20.0
7.5	7.9	8.2	8.2	8.2	8.5
8.2	8.7	8.9	9.0	9.1	9.2
704	511	408	353	324	297
20.5	20.5	20.5	20.5	20.5	20.5
pH	pH	pH	pH	pH	l pH
02 ppm	02 ppm	02 ppm	02 ppm	02 ppm	02 ppm
cond.	Cond.	Cond.	Cond.	Cond.	cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	25	13	40	Control

100	TOXICITY TEST REPORT Sample: 03900685
TEST CONDITIONS	
**	Steico Steel Hilton Works Hamilton, ONT (950006) West Central
	Iron and Steel East Side Filter Stage 1 (1900)
70 -0	bberd /90 /90 at: 1625
Type of Bioassay : ST (D	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal : D. Weight(gm) :	Magna
MORTALITY DATA	
CONC.	T I M E TOTAL MORTALITY
x 00:00 24:00 48:00	×
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50 : N	Non-lethal
95% fid. limits : (2°0°0 - 0°0
Comments : Nor	Non-lethal

	I M E	7.9 8.3 601 21.0	8.1 8.4 448 21.0	8.5 8.5 369 21.0	8.2 8.6 333 21.0	8.2 8.6 313 21.0	8.8 8.8 294 21.0
	D T 1	20.5	20.5	20.5	20.5	20.5	20.5
Sample Number: 03900685	A P S E	7.8 8.3 601 20.5	8.8 8.8 20.5	8.3 8.9 364 20.5	8.4 8.9 330 20.5	8.4 8.9 311 20.5	8.3 9.3 294 20.5
	EL	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(E)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.3 9.3 302 20.0	8.4 9.5 321 20.0	8.4 9.7 342 20.0	8.3 9.5 378 20.0	8.3 9.3 450 20.0	8.2 9.1 590 20.0
19.0	19.0	19.0	19.0	19.0	19.0
20.0	20.0	20.0	20.0	20.0	20.0
7.9 8.9 303 20.0	8.0 9.1 317 20.0	8.0 8.9 339 20.0	8.0 9.0 374 20.0	7.9 9.1 452 20.0	7.7 9.0 600 20.0
pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Control	•	13	25	20	100

SNOITIONS		
(AUUUSO)	Stelco Steel Hilton Works Hamilton, ONT OSCHORY	
Region : West Central Industry : Iron and Ste	West Central Iron and Steel	
Control point : East Si	Side Filter Stage 2, (2000)	
Laboratory : BAR Sampling Method : Grab Sampled By : P.Peidl Date Collected : 03/06/90 Received : 03/10/90	0 0 at: 1355	
Type of Bioassay : STATIC (Daphni Test Pr	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal : D. magna Weight(gm) : Length(mm) :	В	
MORTALITY DATA		
ELAPSED T	I M E TOTAL MORTALITY	
00:00 24:00 48:00	ж	
100 0 0 1 50 0 4 6 25 0 5 5 13 0 0 0 6 0 0 0 Control 0 0 0	8 50 0 0 0 0	
48 Hour LC50 : >100%		
95% fid. limits : 0.0	× 0.0 -	
Comments : Lethal;	No concentration:effect relationship	

TOXICITY TEST PARAMETERS

	I M E	48:00	8.0 8.5 745 20.0	8.2 8.6 527 20.0	8.3 8.7 417 20.0	8.3 8.7 362 20.0	8.3 8.7 334 20.0	8.4 8.6 306 20.0
		24:00	20.0	20.0	20.0	20.0	20.0	20.0
3900178		00:00	7.7 8.8 746 19.5	8.0 8.8 522 19.5	8.3 8.8 413 19.5	8.4 8.8 358 19.5	8.4 8.8 324 19.5	8.5 8.9 302 19.5
Number: 03900178	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	×	100	20	25	13	•	Control

ж

7.9 8.3 420 20.0 7.8 8.4 370 20.0 7.8 8.4 338 20.0 7.9 8.3 531 20.0 7.9 8.1 670 20.0 00:00 01:00 02:00 04:00 24:00 48:00 TIME ELAPSED 7.7 9.0 369 20.0 7.7 8.9 425 20.0

MISA Daphnia

TEST_CONDITIONS	
Company : Stelco Steel Hilton Works Hamilton, ONT	
Region : West Central Industry : Iron and Steel	
Control point : East Side Filter Stage 2, ()	(2000)
Laboratory BAR Sampling Method Grab Sampled By P. Peidl Date Collected 04/03/90 Received 04/04/90 at: 1135	
Type of Bioassay : STATIC (Daphnia magna Acute Lethal Test Protocol. OME, 1988)	Lethality Toxicity 1988)
Test Animal : D. magna Weight(gm) : Length(mm) :	
MORTALITY DATA	
CONC. ELAPSED TIME	TOTAL MORTALITY
x 00:00 24:00 48:00	**
100 0 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50 : Non-lethal	
95% fid. limits : 0.0 - 0.0 \times	
Comments : Non-lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900266

TOXICITY TEST REPORT

	1 M E	8.2 8.7 755 19.5	8.3 9.0 524 19.5	8.4 9.0 411 19.5	8.4 9.0 353 19.5	8.4 8.9 320 19.5	8.5 9.0 294 19.5
	D T	19.0	19.0	19.0	19.0	19.0	19.0
3900266	L A P S E	7.8 8.8 780 19.5	8.1 8.8 544 19.5	8.3 423 19.5	8.3 366 19.5	8.4 3.28 19.5	8.4 8.9 302 19.5
Number: 03900266	ш	pH 02 ppm Cond. Temp(C)					
Sample	TEST CONC.	100	20	25	13	•	Control

E E	8:00	8.0 9.0 794 19.0	8.1 9.0 550 19.0	8.2 9.1 422 19.0	8.2 9.2 367 19.0	8.3 9.2 331 19.0	30,2
1 1 0	24:00 48:00	20.0	20.0	20.0	20.0	20.0	20.0
APSE	00:00	7.7 8.4 800 20.5	8.0 8.8 553 20.5	8.2 8.9 429 20.5	8.2 9.0 366 20.5	8.3 9.0 333 20.5	8.4 299 7.0 7.0 7.0
EL		pH O2 ppm Cond. Temp(C)	pH 02 ppm cond.				
TEST CONC.	3 4	100	20	25	13	9	Control

Stelco Steel Hilton Works Stelco Steel Hilton Works	
: Stelco Steel Hilton Works Hamilton, ONT (950006) : West Central : Iron and Steel : East Side Filter Stage 2, (2000) : BAR : Grabin	TEST CONDITIONS
: West Central : Iron and Steel : East Side Filter Stage 2, (2000) : BAR : Grab : Peidl : 06/05/90 : 06/06/90 at: 1325 : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna : D. magna : D. magna : Non-lethal : 0.0 - 0.0 % : Non-lethal : Non-lethal	0.0
### State Filter Stage 2, (2000) ### BAR ### Grab ### BAR ### BAR ### BAR ### BAR #### BAR #### BAR #### BAR #### BAR #### BAR #### BAR ##### BAR ###################################	····
### STATIC	: East Side Filter Stage 2,
of Bioassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) Animal : D. magna	BAR Grab P. Peidl 106/05/90 106/05/90 106/06/90 at:
Animal : D. magna : D. magna : D. magna : Ctgm) : : Ctgm) : : Ctgm) : : Ctgm) : : Ctgm	of Bioassay : STATIC (Daphnia magna Acute Test Protocol. OME,
ELAPSED TIME MORTALITY X 00:00 24:00 48:00	
ELAPSED TIME MORTALITY 00:00 24:00 48:00 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 fid. limits : 0.0 - 0.0 % ents : Non lethal	
00:00 24:00 48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 Non-lethal limits : 0.0 - 0.0 %	ELAPSED TIME
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 Non-lethal 1 imits : 0.0 - 0.0 %	00:00 24:00 48:00
LC50 : Non-lethal limits : 0.0 - 0.0 : Non lethal	000000
limits : 0.0 - 0.0 : Non lethal	
••	limits : 0.0 - 0.0
	••

TOXICITY TEST PARAMETERS

	1 M E	7.9 8.2 764 19.5	8.0 8.5 533	8.1 8.7 421 19.5	8.2 8.7 364 19.5	8.8 329 19.5	8.3 8.9 304 19.5
	D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
3900445	00:00	7.6 7.9 749 20.5	7.9 8.7 522 20.5	8.1 9.0 410 20.5	8.2 9.0 353 20.5	8.3 9.0 324 20.5	8.3 9.1 296 20.5
Sample Number: 03900445	ш	pH 02 ppm cond. Temp(C)	t pH 02 ppm Cond. Temp(C)				
Sample	TEST CONC.	100	20	52	13	9	Control

H H	48:00
1 0	24:00
APSE	00:00
EL	
TEST	*

7.8 8.0 710 20.0	8.0 8.1 511 20.0	8.1 409 20.0	8.2 8.1 356 20.0	8.2 8.1 326 20.0	8.2 8.2 301
20.0	20.0	20.0	20.0	20.0	
7.5 8.4 708 21.0	7.8 8.8 513 21.0	8.1 8.9 409 21.0	8.2 8.9 353 21.0	8.3 8.9 324 21.0	8.5 9.2 297
pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pN O2 ppm Cand. Temp(C)	t pill 02 ppm Cond.
100	20	25	13	9	ontrol

TEST PARAMETERS

TOXICITY TEST REPORT Sample: 03900686	TOXICI	TOXICITY TEST PAR
TEST_CONDITIONS	Slower	Sample Number 03
Company : Stelco Steel Hilton Works Hamilton, ONI	TEST	E L
Region : West Central Industry : Iron and Steel	***	
Control point : East Side Filter Stage 2, (2000)	5	3
Sampling Method : Grab Sampled By : T. Hibberd	2	02 ppm Cond. Temp(C)
	50	pH 02 ppm cond. Temp(C)
Type of Bloassay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	25	pH 02 ppm
		Temp(C)
Length(mm) :	13	pH 02 ppm
MORTALITY DATA		Cond. Temp(C)
TEST ELAPSED TIME TOTAL CONC.	9	pH 02 ppm
x 00:00 24:00 48:00 x		Cond. Temp(C)
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	of ph O2 ppm Cond. Temp(C)
48 Hour LC50 : Non-lethal		
95% fid. limits : 0.0 - 0.0 %		
Comments : Non-lethal		

8.0 8.4 609 20.0

7.7 8.2 608 20.0

20.02

ELAPSED TIME

umber: 03900686

00:00 24:00 48:00

8.2 8.6 454 20.0

8.0 8.6 460 20.0

20.02

8.3 8.7 381 20.0

8.2 8.7 385 20.0

20.02

8.8 8.8 350 20.0

8.3 349 20.0

8.4 8.9 329 20.0

COMPANY: Stelco Steel Lake Erie Works, Nanticoke

(950105)

SECTOR: Iron and Steel REGION: West Central

SUMMARY

The data for 13 acute lethality trout bioassays conducted on samples collected from the # 4 Pond discharge between November 1989 and November 1990 were submitted by Stelco Steel Lake Erie Works. Twelve of the samples were determined to have been not acutely lethal to trout, while the remaining two samples produced a 96 h LC50 > 100 %. A Ministry audit sample collected in April 1990 was determined nonlethal to test fish.

#4 Pond Discharge

03890273 sampled: 11/15/89 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03890324 sampled: 12/05/89 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900034 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900092 sampled: 02/06/90 non-lethal 95% fid. limits: 0.0 - 0.0 % comments: Single Concentration Test

03900174 sampled: 03/06/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; Non lethal

03900261 sampled: 04/03/90 non-lethal

95% fid. limits: 0.0 -0.0 %

comments: Single concentration test; non lethal

01900069 sampled: 04/17/90 non-lethal

95% fid. limits: 0.0 - 0.0 % comments: MISA Audit; Non-lethal

03900342 sampled: 05/01/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non lethal; single concentration test

Stelco Steel Lake Erie Works (continued)

03900447 sampled: 06/05/90 LC50: >100 %

95% fid. limits: 0.0 - 0.0 %

comments: Single concentration test; 5% mort. @ 100%

03900549 sampled: 07/03/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; Non lethal

03900650 sampled: 08/07/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Single Concentration Test; non-lethal

03900769 sampled: 09/04/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900899 sampled: 10/11/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non Lethal; single concentration test

Lagoon E

Blowdown Treatment Plant

Storm Water Pond #2

Coal Storage Area

Rain Gauge

Intake Water

TOXICITY TEST PARAMETERS

Sample: 03890273

TOXICITY TEST REPORT

TEST CONDITIONS

Sample Number: 03890273

TEST E L A P S E D T I M E CONC. % 00:00 04:00 24:00 48:00 72:00 96:00

								İ
Control	pH 02 ppm Cond. Temp(C)	7.9 9.0 558 15.5	14.5	15.0	14.0	14.0	8.5 9.3 15.0	
10	pH O2 ppm Cond. Temp(C)	7.9 9.0 607 15.5	14.5	15.0	14.0	14.0	8.5 9.3 608 15.0	
20	pH 02 ppm Cond. Temp(C)	7.9 9.0 655 15.5	14.5	15.0	14.0	14.0	8.5 9.2 657 15.0	
07	pH 02 ppm Cond. Temp(C)	7.9 9.0 754 15.5	14.5	15.0	14.0	14.0	8.4 9.2 755 15.0	
99	pH 02 ppm Cond. Temp(C)	7.9 9.2 882 15.5	14.5	15.0	14.0	14.0	8.4 9.5 883 15.0	
100	pH 02 ppm cond. Temp(C)	8.1 9.3 1054 15.5	14.5	15.0	14.0	14.0	8.1 9.2 1060 15.0	

TEST CONDITIONS	
	: Stelco Steel Lake Erie Works Nanticoke, ONT
Region Industry	(950105) : West Central : Iron and Steel
Control point :	: #4 Pond Discharge, (100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab S. Milne 12/05/89 12/06/89 at: 1300
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout
MORTALITY DATA	
CONC.	ED TIME TOTAL MORTALITY
x 00:00 24:00	48:00 72:00 96:00 %
100 0 0 65 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
96 Hour LC50	: Non-lethal
95% fid. limits	: 0.0 - 0.0 %

TOXICITY TEST PARAMETERS

978	9.4 813 14.5	8.2 9.2 691 14.5	8.2 9.2 627 14.5	8.4 9.4 561 14.5
14.5	14.5	14.5	14,5	14.5
14.5	14.5	14.5	14.5	14.5
14.5	14.5	14.5	14.5	14.5
9.5 966 15.0 7 9	8.8 805 15.0	7.8 9.1 688 15.0	7.8 8.9 630 15.0	7.8 8.9 565 15.0
	02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
07	Ç.	50	10	Control
	02 ppm 9.3 Cond. 966 Temp(C) 15.0 14.5 14.5 14.5	9.3 966 15.0 14.5 14.5 14.5 7.9 8.8 805 15.0 14.5 14.5 14.5	O2 ppm 9.3 Cond. 966 Temp(C) 15.0 14.5 14.5 14.5 O2 ppm 8.8 Cond. 15.0 14.5 14.5 14.5 PH 7.8 O2 ppm 9.1 Cond. 688 Temp(C) 15.0 14.5 14.5 14.5	O2 ppm 9.3 Cond. 15.0 14.5 14.5 14.5 PH 7.9 Cond. 80.8 Cond. 15.0 14.5 14.5 14.5 PH 7.8 O2 ppm 6.88 Cond. 15.0 14.5 14.5 14.5 PH 7.8 O2 ppm 6.88 Cond. 688 Cond. 15.0 14.5 14.5 14.5 PH 8.9 Cond. 15.0 14.5 14.5 14.5 FH 7.8 Cond. 15.0 14.5 14.5 14.5

TOXICITY TEST PARAMETERS

8.3 8.7 556 14.5 8.0 8.5 1039 14.5 8.2 8.9 858 14.5 8.3 9.0 704 14.5 8.2 8.7 632 14.5 8.2 8.5 597 14.5 7.8 8.4 1294 14.5 00:00 24:00 48:00 72:00 96:00 14.0 14.0 14.0 14.0 14.0 14.0 14.0 14.0 14.0 14.0 14.0 14.0 15.0 14.0 15.0 14.0 TIME 15.0 15.0 15.0 15.0 15.0 ELAPSED 7.9 8.7 555 15.0 8.3 9.9 1286 15.0 8.2 9.7 1029 15.0 8.1 9.6 860 15.0 8.0 9.3 702 15.0 8.0 9.1 628 15.0 8.0 9.1 593 15.0 pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. Temp(C)

TEST CONDITIONS		
Сопрапу	: Stelco Steel Lake Erie Works Nanticoke, ONT	dorks
Region Industry	: Vest Central : Iron and Steel	
Control point	: #4 Pond Discharge, (100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Milne : 02/06/90 : 02/06/90 : 02/07/90 at: 1200	
Type of Bioassay	: STATIC (Protocol to determine to for liquid effluents to for the state of the sta	the acute lethality fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout :	
HORTALITY DATA		
CONC.	SED TIME	TOTAL
x 00:00 24:00	00 48:00 72:00 96:00	×
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	0000
96 Hour LC50	: Non-lethal	
95% fid. limits	x 0.0 - 0.0 :	
Commonto	· Cinal a Concentration Test	•

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

		96:00	8.0 9.2 1263	8.1 9.5 1268	8.5 9.4 529 14.0	8.5 9.6 532 14.0
		72:00	15.0	E .	15.0	15.0
	I M	48:00 72:00 96:00	15.0	4	15.0	15.0 15.0
	1 0	24:00	15.0		15.0	15.0
3900092	LAPSE	00:00	8.2 9.9 1269 15.0	9.9	7.8 8.3 8.3 536 15.0	7.8 8.3 536 15.0
Sample Number: 03900092	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm cond.	t pH 02 ppm Cond.	02 ppm Cond. Temp(C)
Sample	TEST CONC.	×	100	100	Control	Control

TEST CONDITIONS		
Company : S	Stelco Steel Lake Erie Works Nanticoke, ONT	TEST
Region : W	(950105) West Central Iron and Steel	CONC.
Control point : #	#4 Pond Discharge, (100)	000
υ	Grab S. Milne	2001
Date Collected : U Received : O Tested : O	03/06/90 03/07/90 at: 1345	100
Type of Bioassay : S	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).	Control
Test Animal : R Weight(gm) : Length(mm) :	Rainbow trout	T T Control p
MORTALITY DATA		001
TEST ELAPSE CONC.	D T I M E MORTALITY	
x 00:00 24:00 48	24:00 48:00 72:00 96:00	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
96 Hour LC50 :	Non-lethal	
95% fid. limits :	× 0.0 - 0.0	
Comments : S	Single concentration test; Non lethal	

TOXICITY TEST PARAMETERS

Sample Number: 03900174

TEST E L A P S E D T I M E CONC. % 00:00 24:00 48:00 72:00 96:00

7.9 9.1 1203 15.0	8.0 9.2 1195 15.0	8.8 8.8 544 15.0	8.4 9.1 533 15.0
14.5	14.5	14.5	14.5
14.0 14.0 14.5	14.0 14.0 14.5	14.0 14.0 14.5	14.0 14.0 14.5
14.0	14.0	14.0	14.0
10.7 1214 15.5	8.7 10.7 1214 15.5	7.8 9.0 544 15.5	7.8 9.0 544 15.5
pH 02 ppm cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
0	00	ntrol	ntrol

MISA Trout

	Stelco Steel Lake Frie Works
in	Nanticoke, ONT
int	(950105) West Central Iron and Steel
	#4 Pond Discharge, (100)
ethod cted ved	BAR Grab S. Milne 04/03/90 04/04/90 at: 1155
Type of Bioassay :	STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal : F Weight(gm) : Length(mm) :	Rainbow trout
MORTALITY DATA	
TEST ELAPSE CONC.	D TIME TOTAL MORTALITY
% 00:00 24:00 48	24:00 48:00 72:00 96:00 %
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000
96 Hour LC50 :	Non-lethal
95% fid. limits :	x 0.0 - 0.0
Comments : S	Single concentration test: non lethal

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900261

TOXICITY TEST REPORT

		00:96	9.8	14.0	7.9	1191	9.7	14.0	8.4	534
		00:00 24:00 48:00 72:00 96:00		14.0 14.5		14.5		14.5		14.5
	TIME	48:00	,	0.4		14.0		14.0		14.5 14.0 14.5
		24:00		C . 4		14.5		14.5		14.5
3900261	ELAPSED	00:00	10.0 1173	0.0	10.0	15.0	7.9	15.0	9.2	15.0
Sample Number: 03900261	ш		DH 02 ppm cond.		pH 02 ppm	Cond. Temp(C)	Control pH 02 ppm Cond	Temp(C)	Control pH 02 ppm	Temp(C)
Sample	TEST CONC.	×	100		100		Control		Control	

TOXICITY TEST PARAMETERS

Sample: 01900069

TOXICITY TEST REPORT

TEST CONDITIONS

: Stelco Steel Lake Erie Works							
	TEST CONC.	E L A P	PSED T	T I M E 0:30 01:00 02:00 27:00 51:00 69:30 96:00	27:00 5	1:00 6	:30 8
: #4 Pond Discharge, (100) : MOE : Grab : Grab	100	pH 02 ppm Cond.	8.2	8.2 99.8 90.8	8.3	9.0	9.5
04/17/90 04/18/90 : 04/20/90 at: 1100	92			88.1 630 15.0	7.7 9.5 640 15.0	7.8 9.4 640 15.0	7.7
: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). : Rainbow trout	07	pH 02 ppm cond. Temp(C)		8.0 9.8 490 15.0	8.0 9.8 490 15.0	8.0 9.6 490 15.0	7.8 9.5 485 15.0
	30	pH 02 ppm cond. Temp(C)	_	7.9 9.8 440 15.0	7.7 9.5 445 15.0	7.7 9.4 445 15.0	7.6 9.2 435 15.0
ELAPSED TIME MORTALITY 00:00 00:30 01:00 02:00 27:00 51:00 69:30 96:00 %	20	pH 02 ppm Cond. Temp(C)	-	7.8 9.8 395 15.0	7.8 9.8 395 15.0	7.8 9.6 395 15.0	7.5 9.4 385 15.0
	10	pH 02 ppm Cond. Temp(C)	_	7.8 330 5.0	7.8 9.7 330 15.0	7.8 9.7 330 15.0	7.4 9.4 320 5.0
	Control	l pH 02 ppm Cond. Temp(C)		7.7 9.6 260 5.0	7.9 9.9 265 15.0	7.9 9.7 265 15.0	6.9 9.4 5.0
: Non-lethal : 0.0 - 0.0 %							
: MISA Audit; Non-lethal							

TEST CONDITIONS	
Сотрапу	: Stelco Steel Lake Erie Works Nanticoke, ONT
Region Industry	: West Central : Iron and Steel
Control point	: #4 Pond Discharge, (100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Milne : 05/01/90 : 05/02/90 at: 1440
Type of Bioassay	: STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout
MORTALITY DATA	
TEST E L A P :	SED TIME TOTAL MORTALITY
00:00 54:00	24:00 48:00 72:00 96:00
100 0 0 100 0 0 Control 0 0	
96 Hour LC50	: Non-lethal
95% fid. limits	: 0.0 - 0.0 ×
	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

TOXICITY TEST PARAMETERS

Sample Number: 03900342

00:96	€.	9.7	8.1 9.8 1240 14.5	8.3 9.1 556 14.5	8.4 9.5 526 14.5
P S E D 7 I M E 00:00 24:00 48:00 72:00 96:00		14.5	14.5	14.5	14.5
T I M E		14.5	15.0 14.5	14.5	15.0 14.5 14.5
D T 24:00		15.0	15.0	15.0	15.0
L A P S E D 00:00 2	8,00	9.8 1220 15.5	8.6 9.8 1220 15.5	8.0 9.5 551 15.5	8.0 9.5 551 15.5
ш	¥	02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
TEST CONC.	100		100	Control	Control

3-6

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

8.3 8.6 541 15.5 8.3 8.7 536 15.5 8.8 8.8 1231 15.5 7.9 8.5 1240 15.5 00:00 24:00 48:00 72:00 96:00 16.0 16.0 16.0 15.5 15.5 16.0 15.5 15.5 TIME 15. 15.5 15.5 15.5 ELAPSED 7.8 8.5 552 15.0 8.8 9.0 1244 15.0 8.8 9.0 1244 15.0 7.8 8.5 552 15.0 pH 02 ppm cond. pH 02 ppm cond. Temp(C) Temp(C) Temp(C) Temp(C) 02 ppm Cond. pH 02 ppm Cond. PH 02 Control Control TEST CONC. 100 100

	Hour LC50 : Non-lethal	# B	By A P S
		,	
••			
••			
••			
. Non-tethal			
. Non-lethal			
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
			24:00
0 24:00 48:00 72:00 96:00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
0 24:00 48:00 72:00 96:00	00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 0 0 0		
MORTALITY 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0	MORTALITY 200:00 24:00 48:00 72:00 96:00	D T I	LAP
E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 0	ELAPSED TIME MORTALITY 00:00 24:00 48:00 72:00 96:00		Y DATA
E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 10 0 0 0 0 10 0 0 0 0 10 0 0 0 0 10 0 0 0	LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 0 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0		
E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 10 0 0 0 0 10 0 0 0 0 10 0 0 0 0 10 0 0 0	E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 0 0 0 0 0 10 0 0 0 0 10 0 0 0 0 10 0 0 0		
LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 rol 0 0 0 0 0 0 rol 0 0 0 0 0 0 ro	LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 10 0 0 0 0 10 0 0 0 0 10 0 0 0 0 10 0 0 0		
: Rainbow trout : L A P S E D T I M E MORTALITY 0 24:00 48:00 72:00 96:00 0	Animal : Rainbow trout t(gm) :	of Liquid	
Animal : Rainbow trout t(gm) : Rainbow trout t(gm) : Rainbow trout t(gm) : TOTAL E LITY DATA	Animal : Rainbow trout t(gm) : Rainbow trout LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 rol 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout : Rainbow trout : Rainbow trout LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00	of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00	04/04/10	
of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout t(gm) : DITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00	of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00	07/03/90	
of Bioassay : 07/04/90 at: 1205 Tested : 07/04/90 at: 1205 of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout t(gm) : Rainbow trout LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00	Tested : 07/03/90 at: 1205 Tested : 07/04/90 at: 1205 Tested : 07/04/90 at: 1205 of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout LITY DATA E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00		
ed By : S. Milne Collected : 07/03/90 Solidected : 07/03/90 Solidected : 07/03/90 Solidected : 07/03/90 String Solidected : 07/04/90 String	ed By Collected : 07/03/90 Collected : 07/03/90 Tested : 07/04/90 at: 1205 Tested : 07/04/90 at: 1205 of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : h(rmm) : E L A P S E D T I M E MORTALITY 00:00 24:00 48:00 72:00 96:00 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0 rol 0 0 0 0 0		
### Bar Bar Bar Bar Bar Bar Bar Bar Bar Bar	### Bar ### ### #### ###################		
### BAR ###################################	### Parory		
ol point : #4 Pond Discharge, (100) atory : BAR BAR BAR BAR BAR S. Milne S.	ol point : #4 Pond Discharge, (100) atory : BAR BAR Grab G		
## Pond Discharge, (100) ## Pond Discharge,	## Pond Discharge, (100) ## Pond Discharge,		
of point : West Central : Iron and Steel : Iron and Steel : Iron and Steel : Grab : Iron and Steel : Iron and Steel : Grab : Grab : S. Milne : Grab : 07/03/90 at: 1205 : 07/04/90 at: 1205 : If a in the scute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout : Rainbow trout : Rainbow trout : Rainbow trout : ELAPSED TIME MORTALITY : 00:00 24:00 48:00 72:00 96:00	of point : West Central stry : Iron and Steel ol point : #4 Pond Discharge, (100) satory : BAR ing Wethod : Grab ed By : S. Milne collected : 07/03/90 Received : 07/03/90 Tested : 07/04/90 at: 1205 of Bioassay : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). Animal : Rainbow trout t(gm) : Rainbow trout ELAPSED TIME MORTALITY 00:00 24:00 48:00 72:00 96:00	Nanticoke,	
Nanticoke, ONT Nanticoke, ONT	Nanticoke, ONT		
Stelco Steel Lake Erie Works Nanticoke, ONT Sy50160; Iron and Steel OT OT OT OT OT OT OT O	### Stelco Steel Lake Erie Works (950105)		
94		T O	ш 3

7.8 9.6 539 15.5 15.0 15.5 16.0 15.5

Control pH 02 ppm Cond. Temp(C)

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900549

TOXICITY TEST REPORT

		00:96	7.8	1018	7.8	1027	800	530
		00:00 24:00 48:00 72:00 96:00		16.0		16.0		16.0
	TIME	48:00		15.5		15.5		15.5
		24:00		15.0		15.0		15.0
3900549	ELAPSED	00:00	8.6	1046	8.6	1046	7.8	539
Sample Number: 03900549	ш		PH 02 ppm	Cond. Temp(C)	pH 02 ppm	Cond. Temp(C)	pH 02 pom	Cond. Temp(C)
Sample	TEST	*	100		100		Control	

ж

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

		00:96	7.9 8.9 765 16.0	7.8 8.8 766 16.0	8.2 8.8 551 16.0	8.2 8.9 548 16.0
		72:00	15.0 15.5	15.5	15.5	15.5
	TIME	48:00	1	15.0	15.0	15.0 15.0
		00:00 24:00 48:00 72:00 96:00	15.0	15.0	15.0	15.0
03900650	ELAPSED	00:00	8.9 8.9 749 16.0	8.7 8.9 749 16.0	7.9 8.3 544 16.0	7.9 8.3 544 16.0
Sample Number: 03900650	ш		pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)	Control pH 02 ppm Cond. Temp(C)
Sample	TEST	3 %	100	100	Control	Control

000000 26 : STATIC (Protocol to determine the acute lethality of liquid effluents to fish. OME, 1983). TOTAL HORTALITY : Stelco Steel Lake Erie Works Nanticoke, ONT (950105) : West Central : Iron and Steel : #4 Pond Discharge, (100) at: 1035 34 00:00 24:00 48:00 72:00 96:00 0.0 000000 Rainbow trout ELAPSED TIME Non-Lethal BAR Grab S. Milne 09/04/90 09/05/90 : Non-lethal 0000000 0.0 0000000 0000000 Laboratory Sampling Method Sampled By Date Collected Received Tested Type of Bioassay 95% fid. limits TEST CONDITIONS MORTALITY DATA Control point 96 Hour LC50 0000000 Test Animal Weight(gm) Length(mm) Region Industry Comments Company Control TEST CONC.

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample: 03900769

TOXICITY TEST REPORT

		00:96	8.2 9.1 756 15.5	8.1 8.7 678 15.5	8.1 8.9 619 15.5	8.2 9.2 578 15.5	8.1 8.7 557 15.5	8.2 8.9 547 15.5	8.5 9.4 526 15.5
		72:00 96:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
	I H E	48:00	15.5	15.5	15.5	15.5	15.5	15.5	15.5
	D T	24:00	16.0	16.0	16.0	16.0	16.0	16.0	16.0
3900769	LAPSE	00:00	8.3 8.8 761 15.5	8.0 8.6 682 15.5	8.0 8.5 626 15.5	7.9 8.3 581 15.5	7.9 8.3 560 15.5	7.9 8.2 550 15.5	7.9 8.2 537 15.5
Sample Number: 03900769	ш		pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm cond. Temp(C)
Sample	TEST	×	100	92	07	20	10	5	Control

TEST CONDITIONS		
Company	: Stelco Steel Lake Nanticoke, ONT	Lake Erie Works NT
Region Industry	(950105) : West Central : Iron and Steel	9.1
Control point	: #4 Pond Discharge,	harge, (100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : R. Kiehl : 10/11/90 : 10/11/90 : 10/12/90 at:	1005
Type of Bioassay	: STATIC (Protocol to of liquid eff	to determine the acute lethality effluents to fish. OME, 1983).
Test Animal Weight(gm) Length(mm)	: Rainbow trout	
MORTALITY DATA		
TEST CONC.	ELAPSED	T I M E TOTAL MORTALITY
\$ 00:00 24:00	48:00 72:00	\$ 00:06
100 0 0 100 0 0 Control 0 0 Control 0 0	0000	0 0 0 0
96 Hour LC50	: Non-lethal	
95% fid. limits	0 - 0.0 :	0.0
Comments	: Non Lethal; s	single concentration test

TOXICITY TEST PARAMETERS

Sample: 03900899

TOXICITY TEST REPORT

M	00:96		8.1	0.6	687	15.5	8.0	8.5	683	15.5	8.5	9.5	534	15.5	8.5	9.5	534	15.5
T	72:00					15.0				15.0				15.0				15.0
Q Z S	48:00					15.5				15.5				15.5				15.5
LAP	24:00					15.5				15.5				15.5				15.5
E	00:00		8.1	10.0	687	15.0	8.1	10.0	687	15.0	8.0	9.5	543	15.0	8.0	9.5	543	15.0
			рН	O2 ppm	Cond.	Temp(C)	hd	O2 ppm	Cond.	Temp(C)		02 ppm	Cond.	Temp(C)			Cond.	Temp(C)
TEST			100				100				Control				Control			
	ELAPSED TIM	E L A P S E D T I 00:00 24:00 48:00 72:00	ELAPSED TI 00:00 24:00 48:00 72:00	ELAPSED TIM 00:00 24:00 48:00 72:00 96 pH 8.1	ELAPSED TIM 00:00 24:00 48:00 72:00 96 PH 8:1 02 ppm 10:0	ELAPSED TI 00:00 24:00 48:00 72:00 pH 8.1 02 ppm 10.0 Cond. 687	ELAPSED TIM 00:00 24:00 48:00 72:00 96 pH 8.1 02 ppm 10.0 cond. 687 Temp(C) 15.5 15.5 15.0 1	ELAPSED TIM 00:00 24:00 48:00 72:00 96 pH 8.1 02 ppm 10.0 Cond. 687 Temp(C) 15.5 15.5 15.0 1	ELAPSED TIM 00:00 24:00 48:00 72:00 96 pH 8:1 02 ppm 10:0 cond. 687 Temp(C) 15:0 15:5 15:0 1 pH 8:1 02 ppm 10:0	ELAPSED TIM 00:00 24:00 48:00 72:00 96 pH 02 ppm 10.0 cond. Temp(C) 15.0 15.5 15.5 15.0 1 pH 02 ppm 02 ppm 02 ppm 03 ppm 0687	E L A P S E D T I M 00:00 24:00 48:00 72:00 96 PH 02 ppm 08.1 0.0 0 cond. PH 02 ppm 10.0 02 ppm 68.1 02 ppm 68.1 02 ppm 68.7 Temp(C) 15.0 15.5 15.5 15.0 1 Temp(C) 15.0 15.5 15.0 1	PH 8.1 02 ppm 68.1 cond. T5.0 15.5 15.5 15.0 1 10.0 cond. ELAPSED TIM 8.1 02 ppm 68.1 cond. Temp(C) 15.0 15.5 15.5 15.0 1 10.0 cond. E87 Temp(C) 15.0 15.5 15.5 15.0 1 10.0 cond. E87 Temp(C) 15.0 15.5 15.5 15.0 1 15.0 1 pH 8.0	PH 8.1 Cond.	PH 8.1 Cond. Temp(C) 15.0 15.5 15.0 15.0 15.0 15.0 15.0 15.0	PH 8.1 Cond.	PH 8.1 Cond.	PH 8.1 Cond.	PH 8.1 Cond.

MISA Trout

TEST REPORT Sample: 03900899		Stelco Steel Lake Erie Works Nanticoke, ONI		irge, (100)	1005	to determine the acute lethality effluents to fish. OME, 1983).			TOTAL MORTALITY	% 00	0000		0.0 %	Single concentration test
TOXICITY TES		: Stelco Stee Nanticoke,	: West Central	: #4 Pond Discharge,	BAR Grab R. Kiehl 10/11/90 10/11/90 10/12/90 at:	: STATIC (Protocol t of liquid e	: Rainbow trout		ED TIME	48:00 72:00 96:00	0000	: Non-lethal	. 0.0 :	: Non Lethal;
	TEST CONDITIONS	Сопрапу	Region Industry	Control point	Laboratory Sampling Method Sampled By Date Collected Received Tested	Type of Bioassay	Test Animal Weight(gm) Length(mm)	MORTALITY DATA	TEST ELAPS CONC.	% 00:00 54:00	100 0 0 0 100 0 0 0 0 0 0 0 0 0 0 0 0 0	96 Hour LC50	95% fid. limits	Confinences

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900899

ELAPSED TIME TEST CONC.

00:00 24:00 48:00 72:00 96:00

8.1 9.0 687 15.5	8.0 8.5 683 15.5	8.5 9.5 534 15.5	8.5 9.5 534 15.5
15.0	15.0	15.0	15.0
15.5	15.5	15.5	15.5 15.0
15.5	15.5	15.5	15.5
8.1 10.0 687 15.0	8.1 10.0 687 15.0	8.0 9.5 543 15.0	8.0 9.5 543 15.0
DH 8.1 02 ppm 10.0 Cond. 687 Temp(C) 15.0	pH 8.1 02 ppm 10.0 cond, 687 Temp(C) 15.0	Control pH 8.0 02 ppm 9.5 Cond. 543 Temp(C) 15.0	Control pH 8.0 02 ppm 9.5 Cond. 543 Temp(C) 15.0

COMPANY: Stelco Steel Lake Erie Works, Nanticoke

(950105)

SECTOR: Iron and Steel REGION: West Central

SUMMARY

Data for eleven Daphnia magna acute lethality toxicity tests conducted on samples of effluent from # 4 pond discharge collected between November 1989 and September 1990 were submitted by Stelco Steel Lake Erie Works of Nanticoke. Five of eleven samples were not acutely lethal to Daphnia and four samples had LC50s > 100%. The samples collected in February and June were toxic to Daphnia with 48 h LC50s of 27% and 58% respectively. A sample collected in March and tested in the Ministry laboratory was not acutely lethal to Daphnia.

#4 Pond Discharge

03890273 sampled: 11/15/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 > 100

03890324 sampled: 12/05/89 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100%

03900034 sampled: 01/16/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900092 sampled: 02/06/90 LC50: 26.9 %

95% fid. limits: 19.4 - 37.3 % slope: 3.5

comments: Lethal

03900174 sampled: 03/06/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50>100

03900261 sampled: 04/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

02900069 sampled: 04/17/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: MISA Audit

03900342 sampled: 05/01/90 LC50: >100 % 95% fid. limits: 0.0 - 0.0 %

comments: LC50 >100

Stelco Steel Lake Erie Works (continued)

03900447 sampled: 06/05/90 LC50: 58.4 % 95% fid. limits: 46.2 - 73.8 % slope: 5.7

comments: Lethal

03900549 sampled: 07/03/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non lethal

03900650 sampled: 08/07/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900769 sampled: 09/04/90 non-lethal

95% fid. limits: 0.0 - 0.0 %

comments: Non-lethal

03900899 sampled: 10/11/90 non-lethal 95% fid. limits: 0.0 - 0.0 %

comments: Non Lethal

Lagoon E

Blowdown Treatment Plant

Storm Water Pond #2

Coal Storage Area

Rain Gauge

Intake Water

TOXICITY TEST PARAMETERS

Sample: 03890273

TOXICITY TEST REPORT

Sample Number: 03890273

TEST E L A P S E D T I M E CONC. % 00:00 04:00 24:00 48:00

8.3 9.6 301 20.0	8.4 9.3 342 20.0	8.3 9.2 398 20.0	8.3 9.1 486 20.0	8.3 9.0 670 20.0	8.3 8.9 1032 20.0
19.0	19.0	19.0	19.0	19.0	19.0
20.0	20.0	20.0	20.0	20.0	20.0
7.9 8.9 303 20.0	8.2 9.0 344 20.0	8.2 8.9 398 20.0	8.1 8.9 487 20.0	8.1 9.1 678 20.0	8.1 9.0 1045 20.0
of ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Control	9	13	25	50	100

TEST CONDITIONS	
Сощрапу	Stelco Steel Lake Erie Works Nanticoke, ONI
Region :	West Central Iron and Steel
Control point :	#4 Pond Discharge, (100)
Laboratory Sampling Method Sampled By Date Collected Received	BAR Grab S. Milne 12/05/89 12/05/89 at: 1215
Type of Bioassay :	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal :: Weight(gm) :: Length(mm) ::	D. magna
MORTALITY DATA	
TEST ELAPSE CONC.	E D T I M E TOTAL MORTALITY
% 00:00 24:00 48:00	8:00 %
100 0 0 50 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0	16 0 0 0 0 0 0
48 Hour LC50 :	>100%
95% fid. limits ::	% 0.0 - 0.0
Comments	LC50 >100%

TOXICITY TEST PARAMETERS

Sample: 03890324

TOXICITY TEST REPORT

	I M E	48:00	8.4 8.4 1182 19.5	8.3 8.8 752 19.5	8.3 9.2 512 19.5	8.3 9.2 409 19.5	8.3 9.2 348 19.5	8.3 8.7 289 19.5
	0 1	24:00 4	19.0	19.0	19.0	19.0	19.0	19.0
03890324	APSE	00:00	8.6 9.5 1180 19.0	8.4 9.1 744 19.0	8.4 9.0 525 19.0	8.3 9.0 418 19.0	8.3 8.9 352 19.0	8.3 9.0 293 19.0
Number: 03	EL		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	36	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

8.6 1275 20.0	8.2 8.7 791 20.0	8.3 8.8 544 20.0	8.3 8.8 432 20.0	8.3 8.7 360 20.0	8.3 8.6 293 20.0
19.0	19.0	19.0	19.0	19.0	19.0
8.3 9.2 1262 20.0	8.3 9.0 788 20.0	8.4 8.9 541 20.0	8.4 8.8 430 20.0	8.4 8.8 357 20.0	8.4 8.8 296 20.0
pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
100	50	25	13	9	Control

Jr LC50 : 26.9 %	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		eel Lake Erie Worl ral Steel ischarge, (100) at: 930 Magna Acute Letha ocol. OME, 1988)	ш 7	Company Region Industry Control point Laboratory Sampled By Sampled By Sampled By Date Collected Received Tested Test Tested Tes
	: 26.9		9		
0 11 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	17	%		00 48:00	00:00 24:0
00:00 24:00 48:00 0 11 12 0 4 4 0 0 1 0 0 0 0 0 0 0 0 0	24:00 48:00	TOTAL MORTALITY		E D 1	L A
E L A P S E D 7 I M E MORTALITY 00:00 24:00 48:00 0 10 12 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A P S E D 7 I M E MORTALITY 24:00 48:00				TY DATA
A P S E D T I M E MORTALITY 24:00 48:00 11 12 4 6 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A P S E D I I M E MORTALITY 24:00 48:00				imal gm) mm)
: D. magna : D. magna : D. magna A P S E D T I M E MORTALITY 24:00 48:00 11 12 4 4 6 0 0 0 0 0	: D. magna : : A P S E D T I M E TOTAL 24:00 48:00	lity Toxicity	magna Acute Letha ocol. OME, 1988)		Bioassay
ay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna : D. magna : A P S E D T I M E MORTALITY 24:00 48:00 11 12 4 4 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ay : SIATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna : D. magna : A P S E D I I M E MORTALITY 24:00 48:00		a ::		tory ng Method ng Method ng Method ng Method ng Method ng Method ng Method ng Method ng Method ng Method ng Method ng Method ng Method
d : BAR : Grab : S. Milne : S2/06/90 : 02/07/90 at: 930 : 02/07/90 at: 930 ay : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna : D. magna : 11 12 11 12 10 12 4 4 6 1 0 0 0	d : Grab : S. Milne : S. Milne : S. Milne : S. Milne : D. Milne : D. Magna Acute Lethality Toxicity Test Protocol. OME, 1988) : D. magna : D. magna : S. Milne : D. magna : TOTAL MORTALITY				point
#4 Pond Discharge, (100) #5 Grab #5 A wilne #6 2706/90 #6 202/06/90 #6 202/07/90 at: 930 #7 STATIC #6 Caphnia magna Acute Lethality Toxicity #7 Caphnia magna Acute Lethality Toxicity #7 Caphnia magna Acute Lethality Toxicity #7 Caphnia magna Acute Lethality Toxicity #8 STATIC #8 D TIME #8 APSED TIME #8 APS	# # Pond Discharge, (100) # Grab # Grab # S. Milne # 02/06/90 # 02/07/90 at: 930 # STATIC # (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988) # D. magna # P S E D I I M E # MORTALITY # 17	2	, ONT ral Steel		<u> </u>
### Stelco Steel Lake Erie Works Nanticoke, ONI	: Stelco Steel Lake Erie Works Nanticoke, ONI (950105) : West Central : Iron and Steel : Iron and Steel : S. Milne : S. M				

SLOPE of Mortality Curve : 3.5 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

Sample Number: 03900092

1 M E	8.1 8.8 1229 20.0	8.3 8.8 770 20.0	8.4 8.8 535 20.0	8.4 8.8 423 20.0	8.8 353 20.0	8.4 8.6 300 20.0
D T 24:00	20.0	20.0	20.0	20.0	20.0	20.0
00:00	8.2 8.8 1240 20.0	8.4 8.6 779 20.0	8.5 8.4 543 20.0	8.5 8.4 427 20.0	8.5 8.3 357 20.0	8.5 8.7 300 20.0
E	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
test conc.	100	20	25	13	9	Control

TEST CONDITIONS	
1	
: Company :	Stelco Steel Lake Erie Works Nanticoke, ONT
Region :	(yould) West Central Iron and Steel
Control point :	#4 Pond Discharge, (100)
Laboratory Sampling Method Sampled By Date Collected Received Tested	BAR Grab S. Milne 03/06/90 03/07/90 at: 1425
Type of Bioassay :	STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)
Test Animal "Weight(gm) : Length(mm)	D. magna
MORTALITY DATA	
TEST E L A P S CONC.	ED TIME TOTAL MORTALITY
% 00:00 24:00	78:00 %
100 0 1 25 0 0 1 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000
48 Hour LC50 :	>100%
95% fid. limits :	% 0°0 - 0°0
Comments	LC50>100

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

	I M E	48:00	8.3 8.4 1186 20.0	8.4 8.4 755 20.0	8.4 8.4 534 20.0	8.4 8.4 423 20.0	8.4 8.4 361 20.0	8.4 8.5 303 20.0
	1 0	24:00	19.5	19.5	19.5	19.5	19.5	19.5
Sample Number: 03900174	00:00	8.8 9.2 1192 19.5	8.7 8.8 756 19.5	8.6 8.7 536 19.5	8.5 8.6 424 19.5	8.5 8.7 361 19.5	8.6 8.9 298 19.5	
	EL		pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST		100	80	25	13	9	Control

Stelco Steel Lake Erie Works Nanticoke, ONT (950105) Region	
tted :: ted :: t	Works
thod :: ted :: ted :: sassay :: E L A P S E E L A P S E 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
tted :: ted :: ted ::	0)
E L A P S E E L A P S E 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
E L A P S E D T I M E L A P S E D T I M 0	ethality Toxicity 988)
A P S E D T 1 M 24:00 48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
ELAPSED TIM 00:00 24:00 48:00 0	
Itrol	TOTAL MORTALITY
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	%
	00000
48 Hour LC50 : Non-Lethal	
95% fid. limits : 0.0 - 0.0 %	
Columents	

TOXICITY TEST PARAMETERS

Sample: 03900261

TOXICITY TEST REPORT

	1 M E 48:00	8.3 8.9 1173 19.5	8.4 8.9 731 19.5	8.4 8.9 507 19.5	8.4 8.9 407 19.5	8.4 8.9 343 19.5	8.4 8.7 295 19.5
	T 1	19.0	19.0	19.0	19.0	19.0	19.0
Sample Number: 03900261	A P S E D T 1 M E 00:00 24:00 48:00	8.4 8.9 1214 19.5	8.4 8.9 763 19.5	8.4 8.9 533 19.5	8.4 8.9 424 19.5	8.4 8.9 358 19.5	8.4 8.9 302 19.5
	EL	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	рн O2 ррт Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	t pH 02 ppm Cond. Temp(C)
Sample	TEST CONC.	100	20	25	13	9	Control

TEST CONDITIONS			
Company Region Industry	Stelco Steel Lake Erie Works Nanticoke, ONI (950105) West Central : Iron and Steel	Sample TEST CONC.	Number: U290
Control point Laboratory Sampling Method Sampled By	#4 Pond Discharge, (100) MOE Grab M. Smithson	100	pH 02 ppm Cond. Temp(C)
Date Collected Received Tested	: 04/17/90 : 04/19/90 at: 1130	09	pH 02 ppm Cond. Temp(C)
Type of Bloassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	30	pH 02 ppm cond.
	: D. magna	15	Temp(C) pH 02 ppm Cond.
ALIIT C:	TOTAL	ī.	pH 02 ppm Cond.
% 00:00 01:00 60 0 0 30 0 0 15 0 0 5 Control 0 0	00:00 01:00 02:00 04:00 48:00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Control	Temp(C) Cond. Temp(C)
48 Hour LC50 95% fid. limits Comments	: Non-lethal : 0.0 - 0.0 % : MISA Audit		

AMETERS

8.75 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 00:00 01:00 02:00 04:00 24:00 48:00 TIME APSED 690000

TOXICITY TEST	TEST REPORT Sample: 03900342	
TEST CONDITIONS		
Company : Stelco Steel L Nanticoke, ONI (950105) Region : West Central Industry : Iron and Steel	Stelco Steel Lake Erie Works Nanticoke, ONT (950105) West Central Iron and Steel	
Control point : #4 Pond Discharge,	charge, (100)	
Laboratory : BAR Sampling Method : Grab Sampled By : S. Milne Date Collected : 05/01/90 Received : 05/01/90 Tested : 05/02/90 at:	t: 1115	
Type of Bioassay : STATIC (Daphnia magna Test Protocol.	gna Acute Lethality Toxicity ol. OME, 1988)	
Test Animal : D. magna : Weight(gm) : Length(mm) :		
MORTALITY DATA		
TEST ELAPSED TIME CONC.	E TOTAL MORTALITY	
% 00:00 24:00 48:00	%	
100 0 0 3 50 0 1 1 25 0 0 0 13 0 0 0 6 0 0 0 Control 0 0 0	0000	
48 Hour LC50 : >100%		
	% 0.0	
Comments : LC50 >100		

TOXICITY TEST PARAMETERS

Sample Number: 03900342

9 O	228	25 4 2 5 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	WO 83 20	NOW	wo ws	5.00
I M E	8.8 1202 19.5	8.2 9.1 754 19.5	8.3 9.0 528 19.5	8.3 9.0 415 19.5	8.3 9.0 352 19.5	8.3 9.0 301 19.5
D TIME 24:00 48:00	20.0	20°0	20.0	20.0	20.0	20.0
L A P S E 00:00	8.6 9.0 1218 20.5	8.4 9.0 762 20.5	8.4 9.1 531 20.5	8.4 9.1 417 20.5	8.4 9.1 354 20.5	8.4 9.0 299 20.5
ш	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	ot pH 02 ppm Cond. Temp(C)
TEST CONC.	100	50	25	13	•	Control

19.5

19.5

pH 02 ppm Cond. Temp(C)

SLOPE of Mortality Curve : 5.7 LC50 Calculated By : Probit

TOXICITY TEST PARAMETERS

8.8 356 19.5 8.2 8.8 537 19.5 8.2 8.7 1228 19.5 8.2 8.8 770 19.5 B.2 B.8 425 19.5 00:00 24:00 48:00 H ... 19.5 19.5 19.5 19.5 ELAPSED 8.5 9.1 761 20.5 8.4 9.1 415 20.5 8.4 9.1 525 20.5 8.4 9.1 357 20.5 Sample Number: 03900447 pH 02 ppm Cond. Temp(C) pH O2 ppm Cond. Temp(C) Temp(C) Temp(C) pH 02 ppm Cond. Temp(C) pH 02 ppm Cond. pH 02 ppm Cond. TEST CONC. 100 20 25 13 9

TEST CONDITIONS		
Сощрапу	: Stelco Steel Lake Erie Works Nanticoke, ONI	
Region Industry	(YSUIDS) : West Central : Iron and Steel	
Control point	: #4 Pond Discharge, (100)	
Laboratory Sampling Method Sampled By Date Collected Received Tested	: BAR : Grab : S. Milne : 07/03/90 : 07/04/90 at: 1010	
Type of Bioassay	: STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	
Test Animal Weight(gm) Length(mm)	: D. magna :	
MORTALITY DATA		
TEST E L A P	S E D I I M E TOTAL MORTALITY	
% 00:00 24:0	24:00 48:00 %	
100 0 0 50 50 0 0 0 0 0 0 0 0 0 0 0 0 0	00000	I
48 Hour LC50	: Non-lethal	ı
95% fid. limits	% 0.0 - 0.0 :	
Comments	: Non lethal	

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

Sample Number: 03900549

I M E	8.2 8.4 999 19.5	8.2 8.6 655 19.5	8.3 8.6 480 19.5	8.2 8.6 394 19.5	8.3 342 19.5	8.2 8.6 301 19.5
D T	20.0	20.0	20.0	20.0	20.0	20.0
LAPSED TIME 00:00 24:00 48:00	8.6 9.2 995 20.0	8.5 9.2 655 20.0	8.5 9.2 482 20.0	8.5 9.2 395 20.0	8.4 9.2 339 20.0	8.5 9.2 297 20.0
ш	pH 02 ppm cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)
TEST CONC.	100	20	25	13	9	Control

TOXICITY TEST PARAMETERS

Sample Number: 03900650

TEST E LAPSED TIME CONC. 20:00 24:00 48:00

8.2

8.6

Hd

8.6 730 20.5	8.2 8.6 515 20.5	8.3 8.7 405 20.5	8.3 8.7 355 20.5	8.7 326 20.5	8.3 8.8 298 20.5
21.0	21.0	21.0	21.0	21.0	21.0
9.0 739 20.0	8.4 9.0 519 20.0	8.3 9.0 407 20.0	8.2 9.0 357 20.0	8.2 8.9 323 20.0	8.2 9.0 301 20.0
02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH 02 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)	pH O2 ppm Cond. Temp(C)
	20	52	13	9	ontrol

LC50 Calculated By :	Sample: 03900769 TOXICITY TEST PARAMETERS	Sample Number: 03900769 TEST E L A P S E D T I M E CONC. 00:00 24:00 48:00	8.2 9.0 749 20.5 20.5 8.0	25	Cond. 416 Temp(C) 20.5 20.5 13 pH 7.9 02 ppm 9.1 Cond. 356 Temp(C) 20.5 20.5	TOTAL 6 pH 7.9 8.2 0.0 ppm 9.1 9.0 0.0 ppm 9.1 9.0 0.0 ppm 9.1 9.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control pH 7.9 8.2 0.1 0.2 ppm 9.1 9.1 9.1 9.1 9.1 9.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0	
	TOXICITY TEST REPORT	: Stelco Steel Lake Erie Works Nanticoke, ONT (950105) : West Central : Iron and Steel	: #4 Pond Discharge, (100) : BAR : Grab : S. Milne : 09/04/90	: 09/06/90 at: 1205 : STATIC (Daphnia magna Acute Lethality Toxicity Test Protocol. OME, 1988)	. D. magna	S E D T I M E 00 48:00	00000	: Non-lethal : 0.0 - 0.0 % : Non-lethal
MISA Daphnia		TEST CONDITIONS Company Region Industry	Control point Laboratory Sampling Method Sampled By Date Collected	Tested Type of Bioassay	Test Animal Weight(gm) Length(mm) MORTALIIY DATA	TEST E L A P S CONC. % 00:00 24:00	100 0 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0	48 Hour LC50 95% fid. limits Comments

TEST CONC.

36

2500

SLOPE of Mortality Curve : LC50 Calculated By :

TOXICITY TEST PARAMETERS

ELAPSED TIME 00:00 24:00 48:00 Sample Number: 03900899 TEST CONC.

8.2	8.3	8.4	8.4	8.4	8.7
9.0	9.0	9.0	9.0	9.0	8.7
660	486	396	359	332	310
21.0	21.0	21.0	21.0	21.0	21.0
21.0	21.0	21.0	21.0	21.0	21.0
8.1	8.3	8.4	8.4	8.4	8.4
9.1	9.0	9.0	9.0	9.0	9.0
656	483	397	358	330	305
20.5	20.5	20.5	20.5	20.5	20.5
pH	pH	pH	pH	pH	1 pH
02 ppm	02 ppm	02 ppm	02 ppm	02 ppm	02 ppm
Cond.	Cond.	Cond.	Cond.	Cond.	Cond.
Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)	Temp(C)
100	20	52	13	9	Control



